

TECHNOLOGY

REVIEW

June 1959

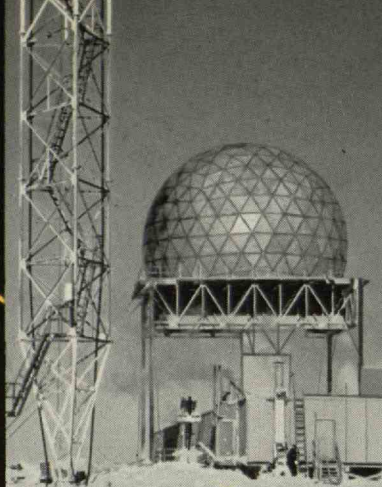
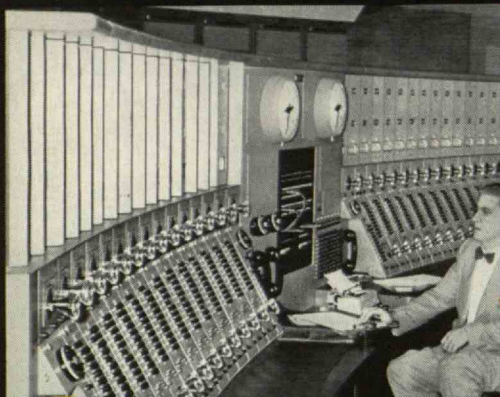


technology review

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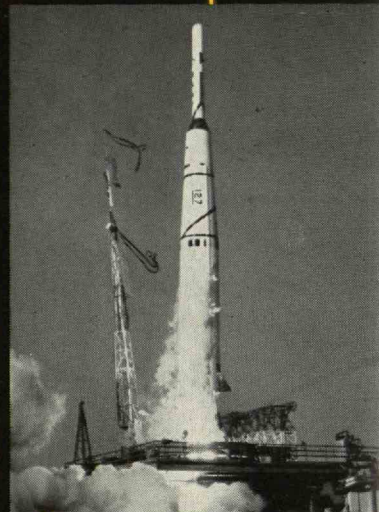
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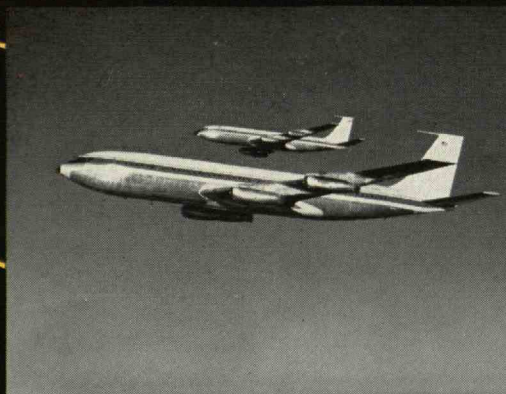
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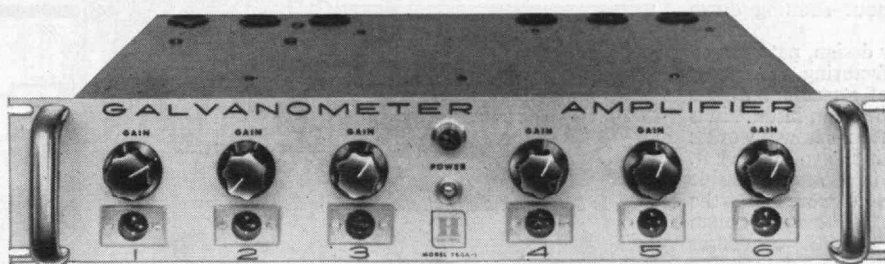
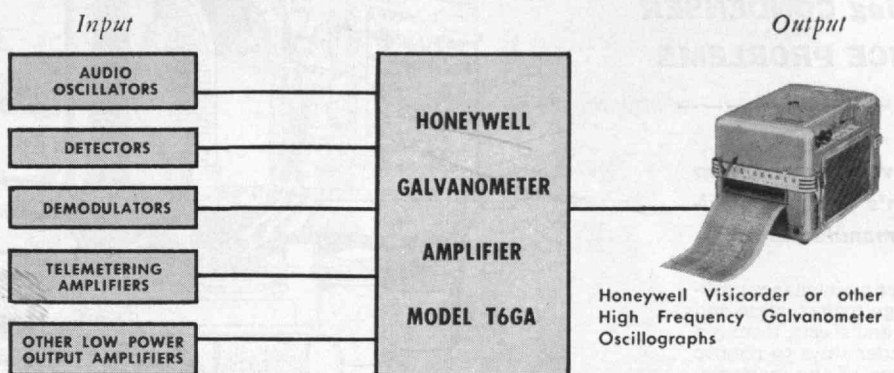
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NEW GALVANOMETER AMPLIFIER

**Strengthens Low Power Signals
to Drive High Frequency Oscillographs**



Galvanometer Amplifier, Model T6GA-1, measures 3½" high, 19" wide, 15½" deep.

DESCRIPTIVE DATA

VOLTAGE GAIN:

Adjustable from 0 to 1.0

OUTPUT (37 OHM LOAD):

± 2.4 volts at 65 ma d-c to 8 Kc, limits at ± 100 ma.

OUTPUT IMPEDANCE:

2 Ohms d-c to 10 Kc

CONTROLS:

6 GAIN controls, 1 Power ON-OFF switch

INPUT IMPEDANCE: 47 K

ISOLATION:

Individually floating channels for use with ungrounded loads

NOISE:

Less than 3 mv peak-to-peak

DRIFT:

Less than 3 mv/°F

POWER REQUIREMENTS:

115 volts ± 10 volts, 50 to 440 cps, 45 watts

With Honeywell's new Galvanometer Amplifier, Model T6GA-1, high frequency oscillographs can now be operated directly by low power input sources of 1 volt or more. These inputs, some of which are shown in the diagram above, should have output impedances of 10 K or less although higher source impedances can be tolerated. Noise and drift are indistinguishable on the recorded output when the galvanometer-amplifier combination has a maximum sensitivity of 1 inch per volt.

The Model T6GA-1 is a compact, six channel, three stage transistor d-c amplifier with overload protection to eliminate both danger of transistor damage and galvanometer burnout.

Each of the six amplifier channels is isolated from ground by individual floating power supplies. Write for Bulletin B-ET6 to Minneapolis-Honeywell, Boston Division, Dept. 1, 40 Life Street, Boston, Mass.

Honeywell



First in Control

The contributions

C. H. Wheeler's Reverse Flow makes in solving CONDENSER MAINTENANCE PROBLEMS

An informative advertisement from one of the nation's most experienced condenser manufacturers

Since a major condenser maintenance problem is caused by foreign matter, algae and scale which clog tubes and sheets, there is a constant search for better ways to remove this contamination. One of the most successful methods is Reverse Flow (see diagram on right), a system of back-flushing tubes and sheets without shutting down the condenser.

This Reverse Flow design, patented by C. H. Wheeler Manufacturing Company, designer and builder of steam condensers since 1903, has proved itself in installations throughout the world. Here's how it works:

Normal operation is shown on the left. Water enters through inlet A with inside port open, flows through tube bank C to the rear of the condenser. It returns through tube bank D to the front of the condenser and discharges at E.

The right side of the diagram above shows Reverse Flow in operation in a C. H. Wheeler Dual Bank, Divided Water Box Condenser. Water enters through A with outside port open, flows up through channel B and through tube bank D to rear of condenser, returns through tube bank C to front of condenser and discharges at E. Reversing can be accomplished during full load operation and full flow of circulating water, without additional pressure loss. Sluice gates for each half of the condenser move on a common stem. Each half of the condenser can be back-flushed independently; or both halves can be back-flushed simultaneously with one or two circulating pumps operating.

Other Ways To Keep Tubes Clean

Special slugs are sometimes used to remove algae and foreign matter from the insides of condenser tubes. They're forced through the tubes by high-pressure water; thus scale and other contamination is flushed as it's dislodged. When the slugs are metal, care must be taken to prevent ruining them as they fly from the outlet side of the tubes.

Sometimes a 5% HCl solution is introduced into the tubes to dissolve the scale. While this method is effective, it is often necessary to leave the acid in the tubes for six hours or so—thus prolonging down time. Also, it's necessary to flush the tubes before the condenser can be put back in service.

In general, maintenance becomes more of a problem as water-source pollution increases; also as circulating water temperature rises, because the rate of scale formation increases at higher water temperatures.

Solving Deaeration Problems

Oxygen and other non-condensable vapors in the condensate result from leaks or are introduced through make-up water or heater returns. Most authorities believe that the greatest source of oxygen is make-up water.

Make-up water which is not properly

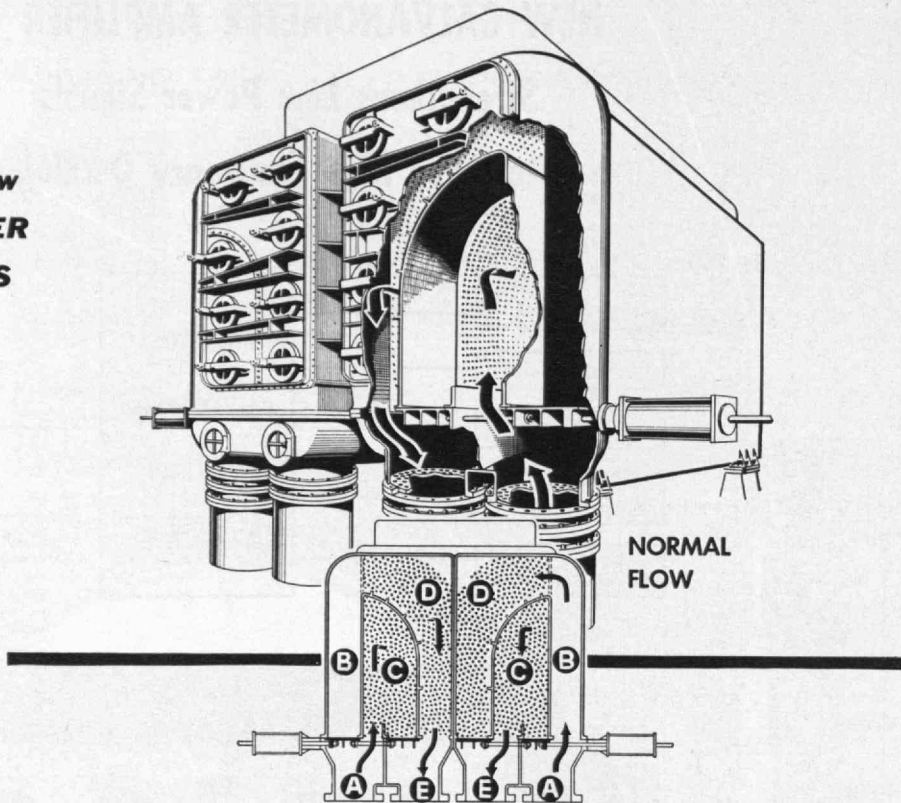


Fig. 1: Simplified diagram showing how Reverse Flow cleans tubes and sheets during full load operation.

heated in the condenser and agitated sufficiently to release entrained gases results in excessive oxygen and other non-condensables in the condensate. As a consequence, corrosive oxides may be deposited in the boiler, reducing its efficiency.

Proper distribution of normal make-up water is achieved in Wheeler condensers by spraying it over the top of the tube banks at both ends of the tubes, and out of the path of high-velocity steam from the turbine exhaust. Steel bars above tubes protect them from water impingement damage.

Heater returns are sprayed in the steam lanes to permit flashing and distribution of the returns and release of entrained gases.

All condensate draining off the tubes is cascaded over a series of horizontal deaer-

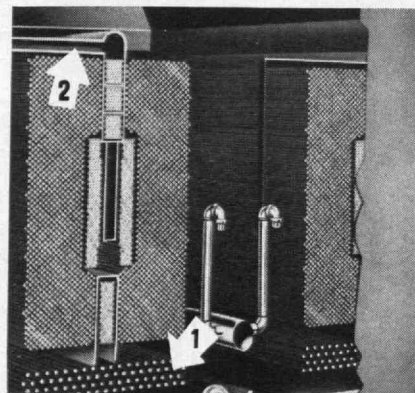


Fig. 3: Drawing of deaerating bars and air-vapor suction line. Tubejet® Air Ejector.

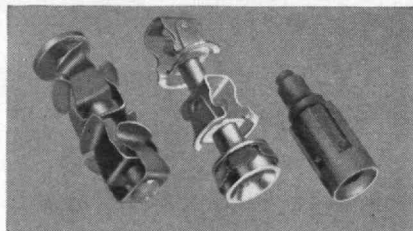


Fig. 2: A few of the types of slugs used to clean the inside of condenser tubes.

ating bars (1, Fig. 3) in the presence of a moving blanket of steam to provide greater agitation and reheating before condensate is drained into the hotwell.

Notice too, location of the air-vapor suction line (2), through which the Tubejet® Ejector draws off non-condensable gases and discharges them to the atmosphere.

In C. H. Wheeler Dual Bank Divided Water Box Condensers the air cooler section is centrally located, so as to reduce depth of steam penetration and consequently resistance to steam passage, achieving a new low in pressure loss in the condenser.

If you have a maintenance problem that doesn't seem to improve no matter what you do, C. H. Wheeler may be able to help. Get in touch with a Wheeler representative or write direct. No obligation.

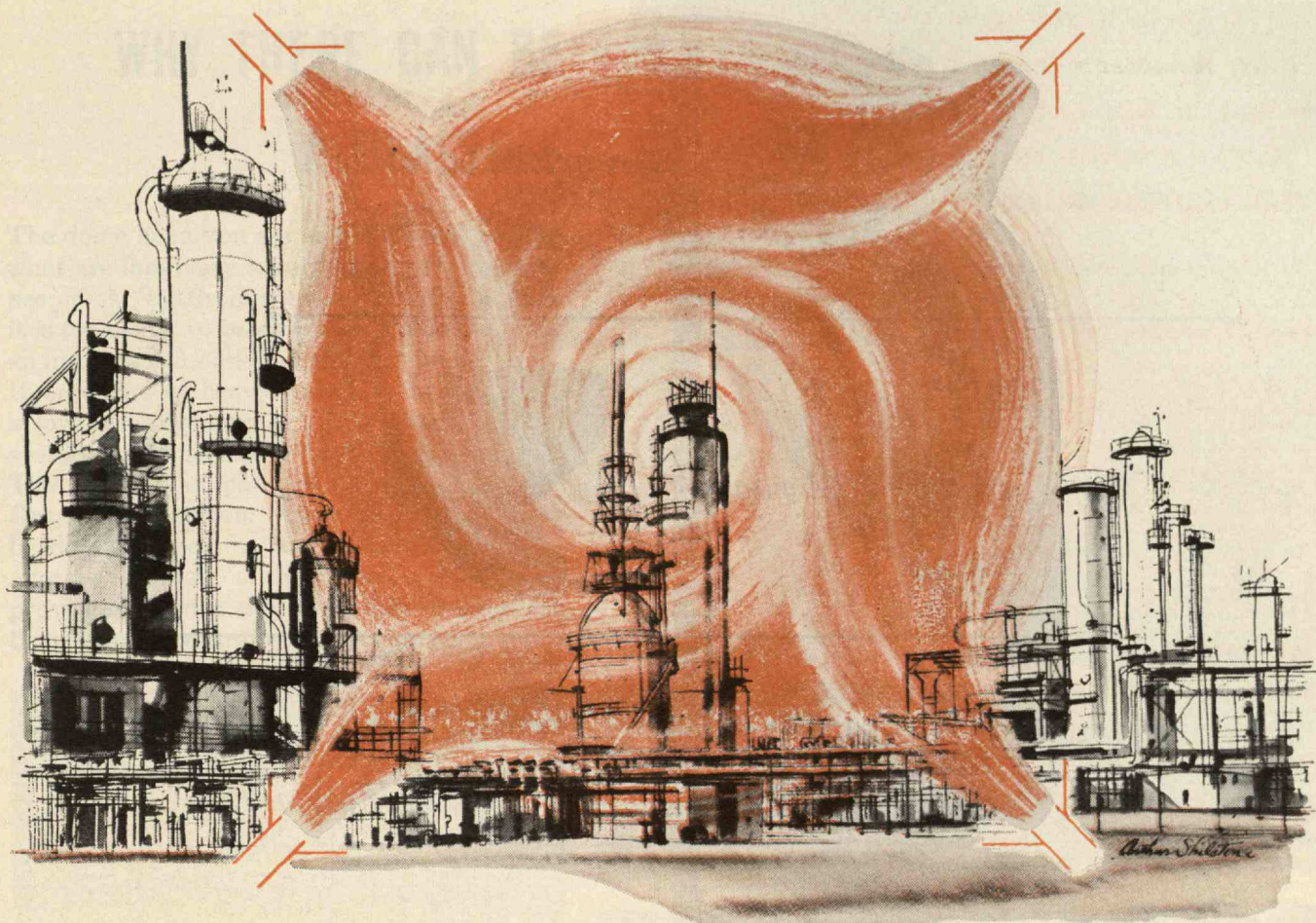
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"CREATIVE ENGINEERING" TURNS A TROUBLESOME WASTE INTO A VALUABLE FUEL



Waste carbon monoxide is sentenced to hard labor in the refinery

For years, refinery operators were concerned about the loss of a by-product with an untapped capacity to do work. Produced in volume by their catalyst regenerators, Btu-loaded carbon monoxide was being discharged to the atmosphere for want of a technique to burn it efficiently and productively.

The problem of burning this "lean," moist, toxic gas for the production of steam was not entirely new to Combustion, since the company had designed a large number of boilers to burn a similar fuel—blast furnace gas. Based on this experience, C-E engineers believed that "tangential firing" * would be the most effective method of burning carbon monoxide. And so it proved to be. Working in close cooperation with refinery engineers, C-E specialists designed a tangentially-fired boiler which has fully demonstrated its ability to provide the intense turbulence and almost instantaneous combustion needed for the most efficient utilization of this waste product. Today, the C-E "CO" Boiler is providing extra dividends to the refinery industry in the form of steam for power and process.

Here then is another example of Creative Engineering—the C-E approach to providing the most advanced designs of boilers for all fuels and steam requirements—from those of small industrial and institutional plants to the largest utility power stations.

* An exclusive C-E development which has been outstandingly successful in burning pulverized coal, oil and gas in hundreds of installations. Involves firing from the four corners of a furnace to create a tornado of flame as illustrated.

"CREATIVE ENGINEERING" is the reason for the leadership attained by C-E products. The products which bear this mark of leadership include:

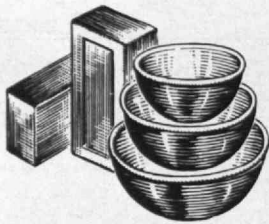
all types of steam generating, fuel burning and related equipment • nuclear power systems • paper mill equipment • pulverizers • flash drying systems • pressure vessels • soil pipe

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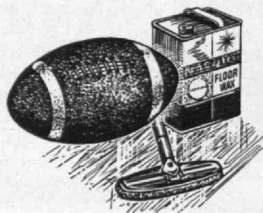


C-205



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... footballs or floor waxes

Better Products begin with CABOT!

The items above can only begin to hint at the enormous range of products which contain a pinch or a pound of one Cabot raw material or another.

Put it this way: no matter where you are as you read this, chances are excellent that you are within reaching distance of at least one.

That's why we're reasonably confident that among the readers of this message, there is at least one whose product or process can profit from a perusal of the list below—and a phone call to Cabot.

Perhaps it is you.

WHICH OF THESE CABOT MATERIALS CAN HELP YOUR PRODUCT?

CABOT CARBON BLACKS . . . more than 50 different grades of channel, furnace and thermal blacks for use by the rubber, printing ink, paint, varnish, lacquer, enamel, plastics, paper, phonograph record, battery and other industries.

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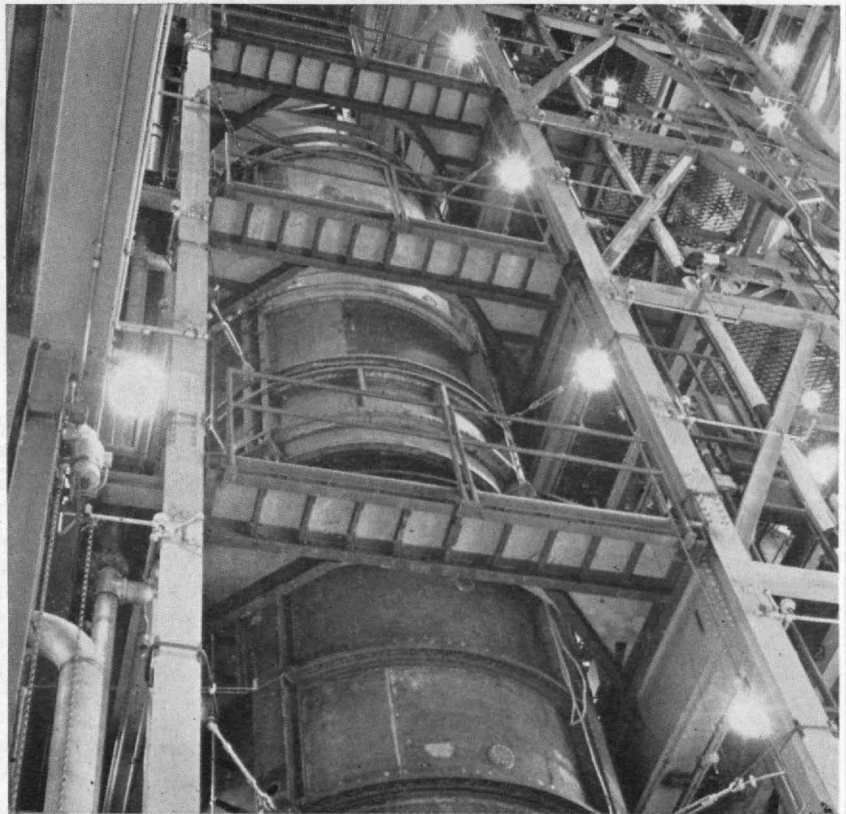
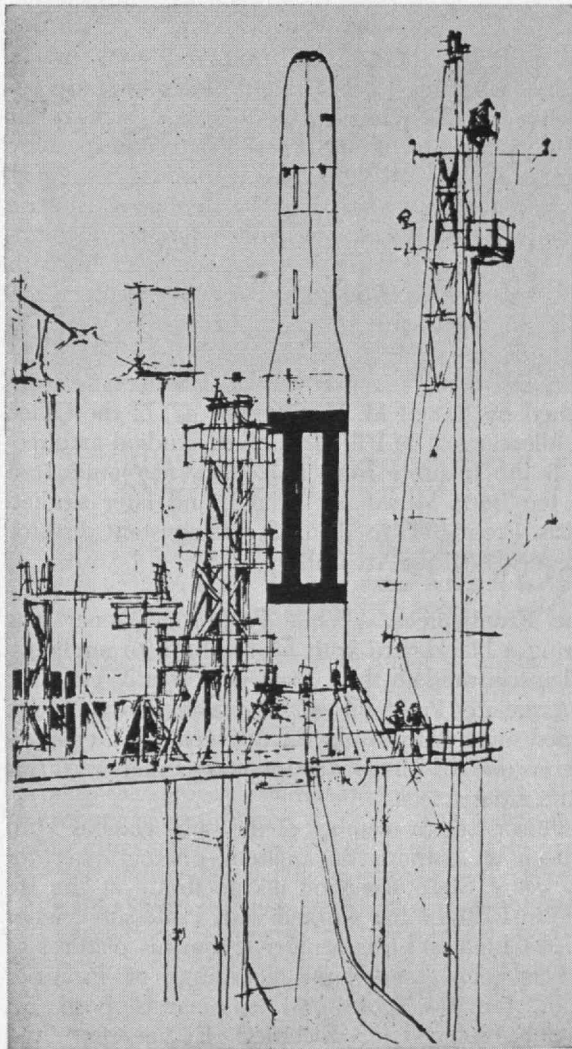
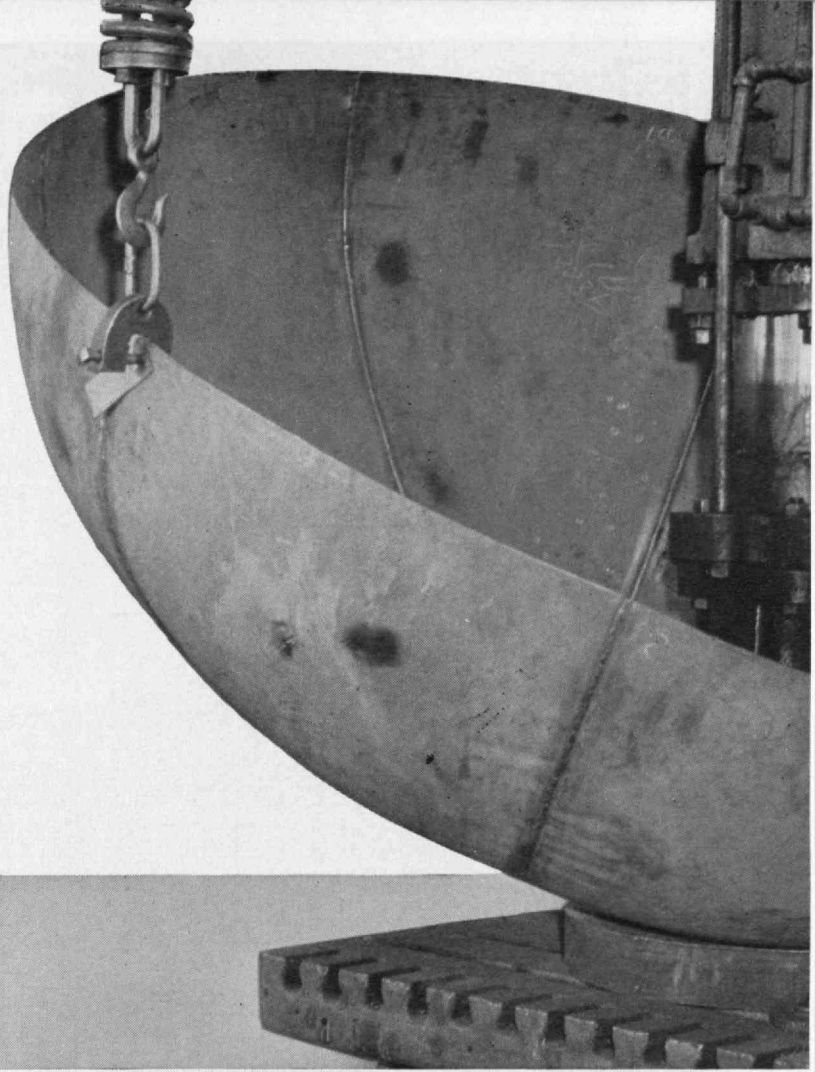
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ONE IMPORTANT REASON WHY THERE CAN BE A BLASTOFF

The dome head you see at the right is part of what are familiarly known among the missiles people as "battleship tanks." That's because it is too heavy to be air borne. Yet it performs an important function in the missiles program. It is a part of heavy-walled units like those below which are used to test components, sub-systems and systems for the TITAN missile by The Martin Company at its Denver facility. Graver's assignment was a number of dome heads and cones for this testing installation, another example of how Graver's century-proved skills with alloys and special steels are being employed in the missiles program.



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THE PHOTOGRAPHERS

The Cover. — GJON MILI, '27, made the photograph of Professor Gordon S. Brown, '31, that is on the cover of *The Review* this month. He did this while working on a photographic essay for *Life* magazine. Mr. Mili made many excellent pictures of members of the Faculty and students at that time, some of which were exhibited last year in the Hayden Memorial Library. The Review plans to publish more of them.

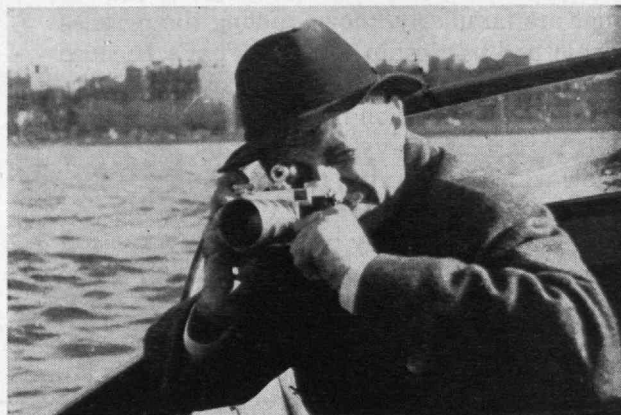


Photo by George W. Brown, '56

Gjon Mili, '27

Mr. Mili was born in Albania and grew up in Romania. He came to the United States to study engineering in 1923, scarcely able to speak English, but quickly gained Professor Norbert Wiener's respect by the speed with which he solved a third-degree equation. While working for the Westinghouse Electric Company, he became increasingly interested in high-speed photography. He has worked closely with Professor Harold E. Edgerton, '27, who considers him "the leading journalist photographer in the world in the use of the stroboscope."

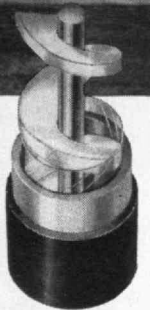
This and other recent covers of *The Review* were designed by RALPH M. H. COBURN, '47, of the Office of Publications at M.I.T. Mr. Coburn studied architecture at the Institute from 1942-1945, was graduated from the Boris Mirski Art School, and later studied in Paris. From 1945 to 1955, he was assistant director of the Boris Mirski Art Gallery.

The Frontispiece. — While Professor Wiener was covering a blackboard with his solutions to nonlinear problems in random theory last year, YUK-WING LEE, '27, Associate Professor of Electrical Engineering, snapped some 400 pictures for the record. An enlargement of one of those documentary photos is this month's frontispiece.

Professor Lee (a member of the same class as Mili) has been an enthusiastic amateur photographer for many years. Since receiving his doctorate at the Institute in 1930, he has worked with Professor Wiener both in China and this country. From his pictures of the blackboard, and tape recordings of Professor Wiener's remarks, Professor Lee, Amar G. Bose, '51, Assistant Professor of Electrical Engineering, and others prepared a manuscript for Professor Wiener to edit and The Technology Press to publish.



New space-scanning radio telescope equipped with *Styroflex® Coaxial Cable*



Styroflex® coaxial cable is an important component part of the new radio telescope now in operation at the National Radio Astronomy Observatory, Green Bank, W. Va. This remarkable telescope is designed to probe the universe for radio waves originating in space.

Six "runs" of Styroflex® coaxial cable connect the 85-foot parabolic antenna with the control building. These "runs"

are used to relay radio waves picked up from outer space by the telescope.

The job of feeding these low-energy radio waves to the control center calls for a high frequency cable with a low inherent noise level. The low loss and low noise to high signal ratio of Styroflex® cable provide the ideal answer to these operational requirements. An additional advantage is the long operating life of

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The superior properties of Styroflex® cable have earned for it an outstanding reputation in high frequency cable applications of many different kinds. If you have a problem requiring the use of a high frequency cable with exceptional characteristics, perhaps Styroflex® can provide the answer.

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How **NRC** High Vacuum Technology Can Help You Conquer Extreme Altitudes

Under the high vacuum conditions encountered in outer space, familiar products and processes which work at sea level may develop strange and unfamiliar characteristics.

For example, at extreme altitudes metal-to-metal contact may cause parts to gall or stick. Graphite lubricants lose their effectiveness. Grease vaporizes rapidly. Plastics change their properties. Some metals such as zinc evaporate directly. Rocket flame patterns change and fuels behave differently.

COSTLY FAILURES AVOIDED — A superior method of making sure your product or component will work in outer space is to test it in simulated high vacuum conditions encountered at altitudes from 200 to 600 miles. A missile failure can cost over \$2,000,000 and all traces of the cause can be lost with it. National Research Corporation can help you predict your product performance in several ways.

Data relating to your product or materials may already be on hand. Much information has been generated in connection with the development of high vacuum processes and equipment over the past 20 years.

Existing facilities are available in our laboratories for doing basic materials research for outer space and missile applications on a contract basis.

Together with our subsidiary, NRC Equipment Corporation, we can deliver a turn key installation which will simulate high vacuum conditions above 100 miles. If you wish to assemble your own high vacuum facilities, standard gauges, valves, pumps and accessories are in stock for immediate shipment. The services of our field engineers will help you save time, money and trouble.

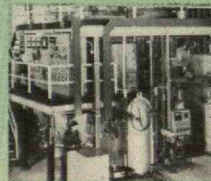
Call or Write in today for preliminary exploration of how we can help you build products or select materials for outer space components.

Chart prepared by National Research to indicate vacuum requirements for space simulation. Data taken from International Geophysical Year Reports. Copyright 1958 by National Research Corp.

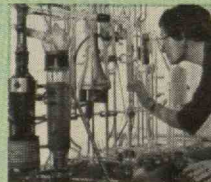
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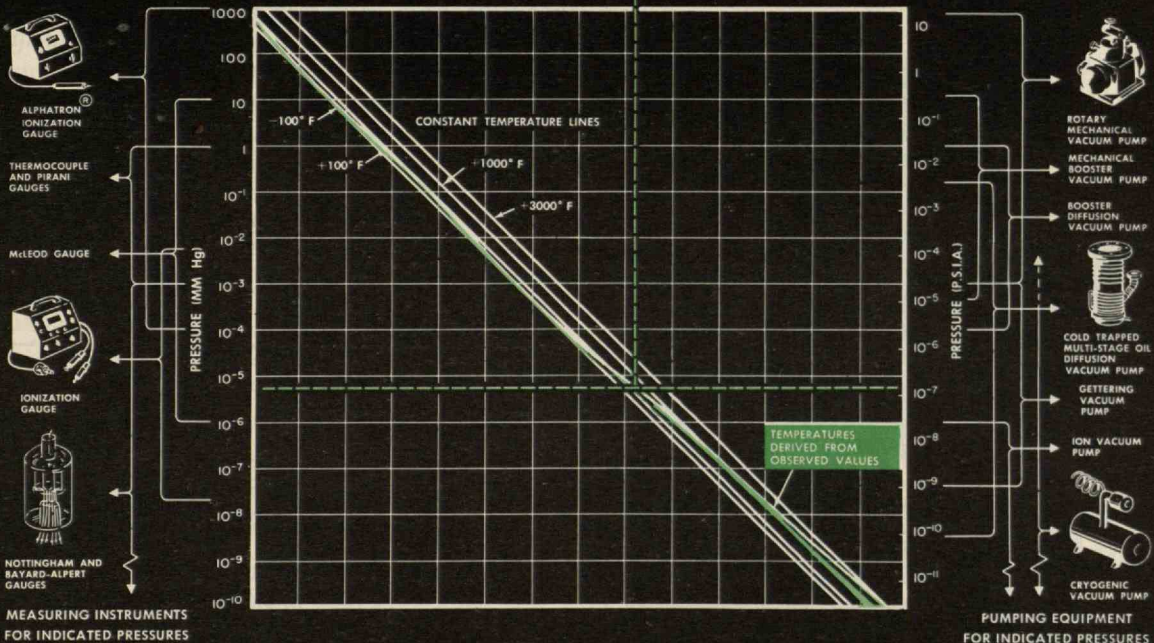
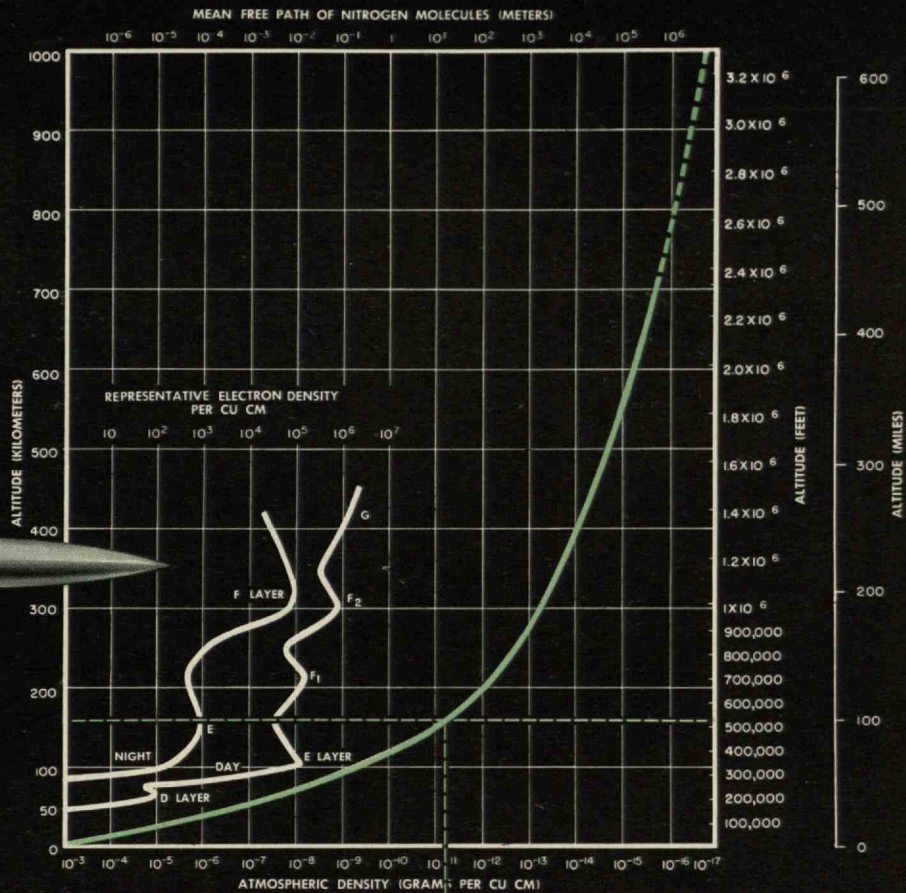
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FREE—Copy of new brochure "HIGH VACUUM TECHNOLOGY AND THE SPACE AGE" which contains a large 3-color version of above chart. Write on your firm letterhead.

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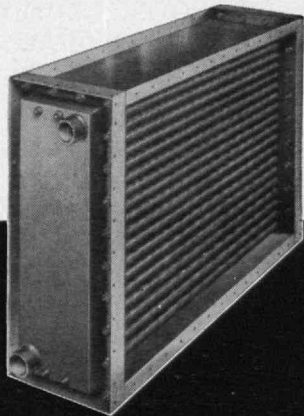
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25 YEARS AGO

■ On June 5, 1934, at commencement exercises held at Symphony Hall to mark the graduation of the Institute's 67th Class, President Karl T. Compton formally created 460 new bachelors and 152 masters of science; 21 new bachelors in architecture; and 15 and 11 new doctors of philosophy and science, respectively. Deducting for those receiving two degrees yielded 639 as the total number in the 1934 graduating group.

As Chief Marshal, Alexander Macomber, '07, who five years earlier had been the Alumni Association's 35th President, led the academic procession which included, besides members of the Corporation and Faculty, 21 of the 50-year Class of 1884, and the following distinguished guests: Joseph B. Ely, Governor of the Commonwealth; Redfield Proctor, '02, the 40th President of the Alumni Association; and Howard Blakeslee, Science Editor of The Associated Press, who gave the commencement address.

Finally, came the long procession of degree candidates led by Richard Bell, President of the Class of 1934, and its three elected marshals: Henry D. Humphreys, G. Kingman Crosby, and Edgar B. Chiswell, Jr.

■ Also on June 5, 1934, the Corporation elected Horace S. Ford, Bursar of the Institute since 1914, as Treasurer to succeed the late Everett Morss, '85; Delbert L. Rhind, Assistant Bursar since 1921, to succeed Mr. Ford as Bursar; and Wolcott A. Hokanson, a member of the Bursar's staff since 1915, to succeed Mr. Rhind as Assistant Bursar.

■ Congratulations were being extended to Frank W. Lovejoy, '94, as President of the Eastman Kodak Company; . . . to John R. Macomber, '97, as Chairman of the newly formed First of Boston Corporation; . . . to Marshall B. Dalton, '15, as President of the Boston Manufacturers Mutual Fire Insurance Company; . . . and to John W. Barriger, 3d, '21, as Chief Examiner of the Railroad Division of the R.F.C.

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Alton Lee Craft,
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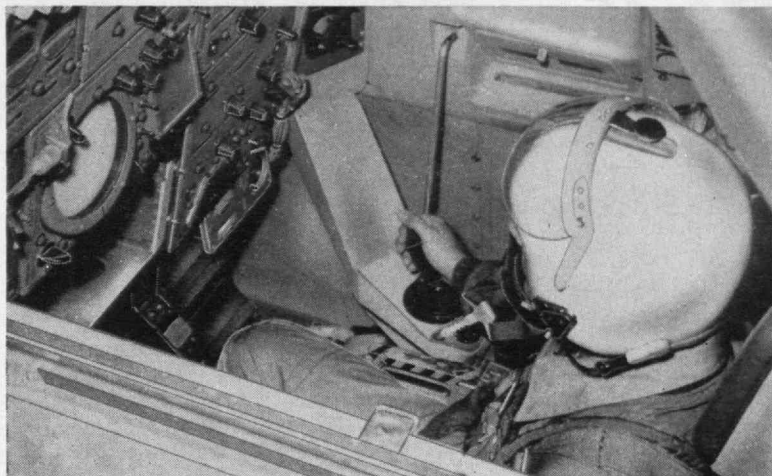
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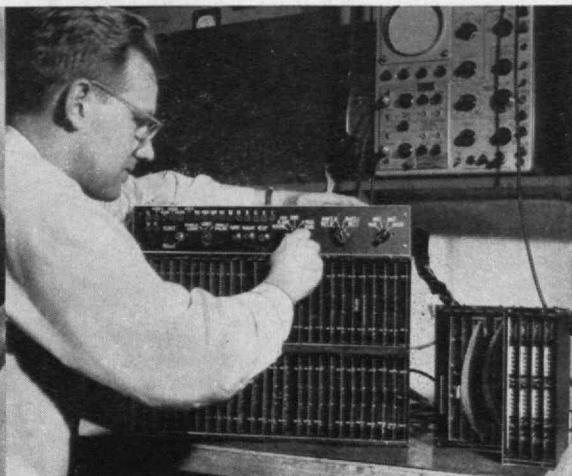
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Alfred T. Glassett, '20 President

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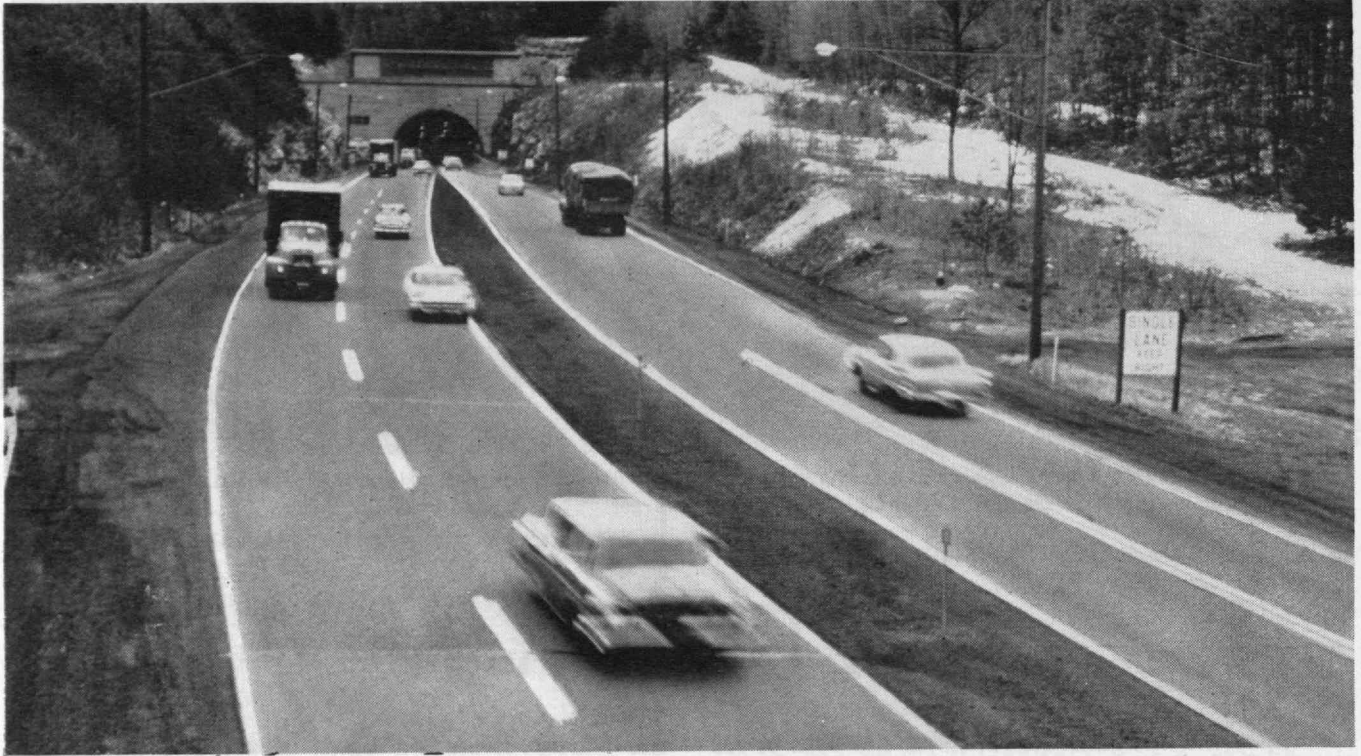
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THE TECHNOLOGY REVIEW



The Technology Review

REG. U.S. PAT. OFF.

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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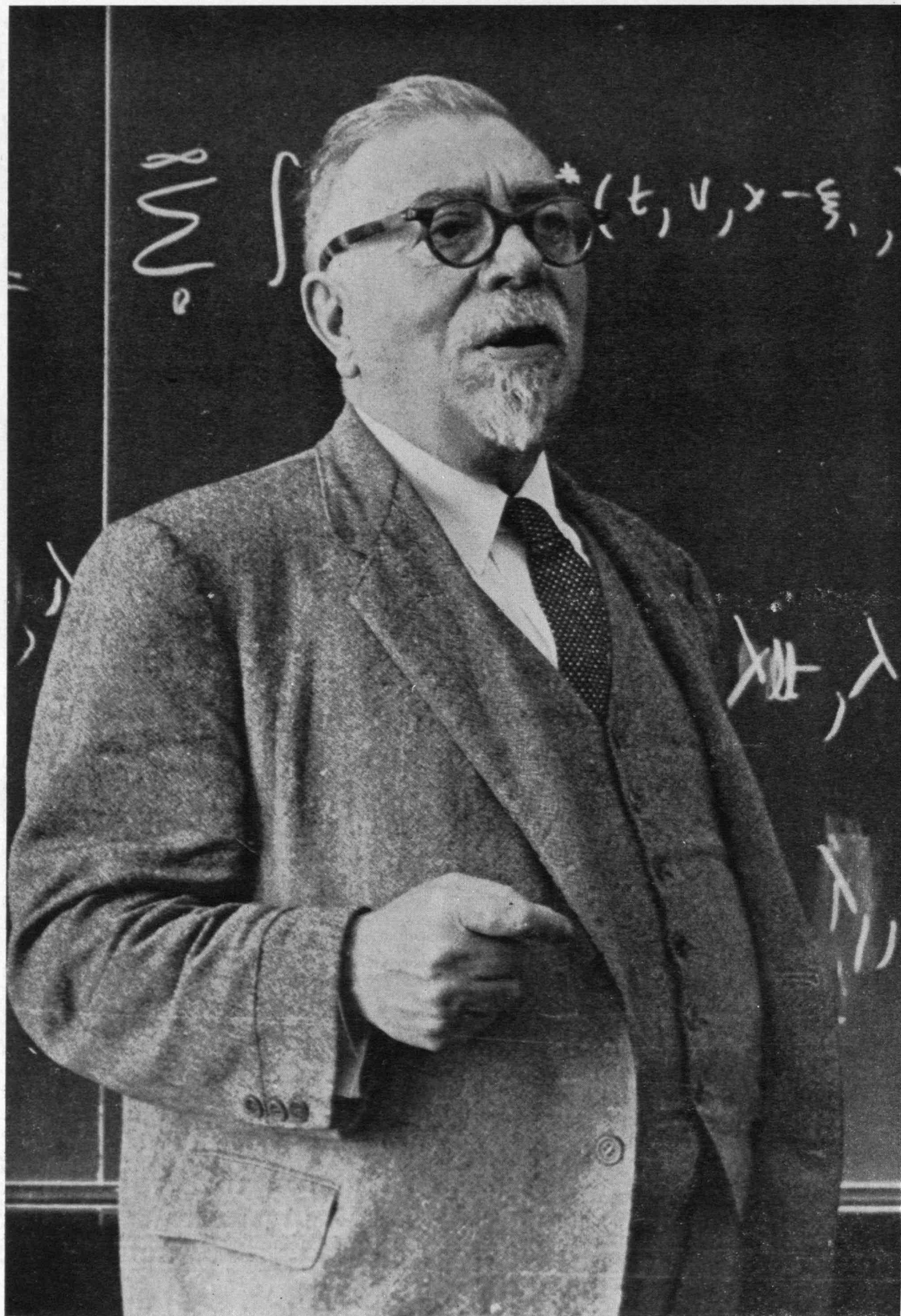
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Mrs. Philip P. Kimball christened a new shell for the M.I.T. crew on May 2. It was named in memory of Philip P Kimball, '56, who died on a geophysical exploration trip in Brazil a year ago. He was the son of the Secretary of the Institute, and was a member of the championship lightweight crew that won at Henley in '95.





Institute Professor Wiener



The Trend of Affairs

Faculty Promotions Announced by M.I.T.'s New President

■ On Monday, June 15, Julius A. Stratton, '23, will be inaugurated as the 11th President of the Massachusetts Institute of Technology. Many of the Alumni and friends of the Institute who will assemble then to honor President Stratton also will wish to congratulate:

Gordon S. Brown, '31, who will become Dean of the School of Engineering on July 1, after heading the Institute's largest department for seven years;

C. Richard Soderberg, '20, because of his achievements as Dean of the School of Engineering since 1954 and his appointment as an Institute Professor;

Norbert Wiener, another newly appointed Institute Professor, who continues to astonish his colleagues by his scientific and literary productivity at the age of 64;

Seventeen others who were promoted to the rank of professor, 27 who became associate professors, and 15 who became assistant professors this spring.

These promotions, and 18 new appointments, were reported to the Faculty in May by President Stratton.

The New Dean of Engineering

■ Professor Gordon S. Brown, '31, who was named by the Executive Committee of the Corporation to succeed Dean Soderberg of the School of Engineering, has been a member of the Institute's teaching staff since 1931. As an authority on automatic control systems, he has won international renown, and as head of the Department of Electrical Engineering he has directed a revolutionary revision of its curriculum.

Professor Brown (who is pictured on the cover of this issue of *The Review*) was the first director of the M.I.T. Servomechanisms Laboratory, which has concentrated on the development of electric and hydraulic servomechanisms and efforts to increase basic knowledge of them. This was the only laboratory of its kind in an American university when World War II began and it undertook an extensive program for the armed services. In recognition of its work under Professor Brown's direction, he received in 1948, the nation's highest civilian award, the President's Certificate of Merit. He also received the Naval Ordnance Develop-



Institute Professor Soderberg

ment Award. Since then the Servomechanisms Laboratory has influenced the educational programs of many other institutions.

Born in Australia, Professor Brown studied at the Melbourne Technical School and worked as a junior engineer before coming to the United States in 1929, at the age of 22. Since enrolling then as a student, he has been continuously associated with the Institute. He became an instructor in 1932 and received his doctorate at M.I.T. in 1938. He often has been a consultant on governmental and industrial problems and has written numerous technical papers and articles on engineering education. He is a Fellow of the American

Academy of Arts and Sciences, the American Institute of Electrical Engineers, and the Institute of Radio Engineers.

"When the whole field of electrical engineering was in a state of great change and development," President Stratton pointed out in his announcement of Professor Brown's appointment as Dean, "he accepted the challenge of revitalizing our instruction and research activities in this field. I am fully confident that he will provide for the whole School of Engineering the same kind of constructive, imaginative leadership which has made the Department of Electrical Engineering the most outstanding of its kind in the country."

Institute Professor Soderberg

■ Few men become Institute Professors, posts created to recognize outstanding achievement and breadth of interest. These posts free men from the limitations of departmental duties. As an Institute Professor, Dean C. Richard Soderberg, '20, will realize his wish to be relieved of administrative work and enabled to devote his efforts wholly to teaching and writing.

Born in Sweden, Dean Soderberg came to the United States and to M.I.T. in 1919 as a Fellow of the American Scandinavian Foundation. After graduation, he was chief engineer of the Turbine Division of the Westinghouse Electric Corporation. His teaching, his leadership as an educator, and his insight into the evolving needs of his profession, have been based on long and close associations with industry, both in this country and abroad; and his articles, on dynamics, vibrations, and the design of turbines and generators, have appeared in both American and European journals.

The Army, the Navy, and the Air Force have honored him for his services to this country, and last year he received the Royal Order of the North Star from Sweden's King Gustav VI. He has honorary degrees from both Chalmers Institute of Technology and Tufts University, and is a member not only of the National Academy of Sciences in this country but also of the Swedish Academy of Engineering Sciences.

Dean Soderberg joined the Institute's Faculty in 1938 as professor in the Department of Mechanical Engineering, became head of that Department in 1947, and was made dean of the School of Engineering in 1954. "His new appointment as Institute Professor," President Stratton said in announcing it, "will open to him still another role in a career of outstanding service to the Institute."

Institute Professor Wiener

■ For decades the academic world has showered its degrees and honors on Norbert Wiener but few have meant as much to him as his appointment to an Institute Professorship — a post for which, President Stratton commented, he is "undeniably" qualified.

Professor Wiener became an instructor in mathematics at M.I.T. 40 years ago — after receiving his Ph.D. from Harvard at the age of 18, studying abroad, teaching elsewhere, and having a fling at Boston newspaper work. No other gentleman of the press has become such a productive mathematician, won a com-

parable place in the affections of students and colleagues, or tried so hard in vain to prevent the world's press from beating a path to his door. The very week that his new appointment was headlined in this country, the Russian press was shattering precedent by publishing an apology for its previous failure to appreciate his scientific work, and book reviewers were asking Random House for galley proofs of his first novel, *The Tempter*.

Most widely known as the founder of cybernetics and a scholar interested in *The Human Use of Human Beings*, Professor Wiener is likely to be found nowadays participating in a seminar on almost any learned topic in whatever language you prefer, when not discussing international affairs, the arts, or bridge hands with his friends, or reflecting on such problems as those confronted in the analysis of brain waves.

With tape recordings of his lectures, supplemented by hundreds of photographs of his blackboards, his admirers helped him produce and prepare for publication last year the first work in English on *Nonlinear Problems in Random Theory*. He has continued such lectures this spring. Publishers are awaiting impatiently the manuscripts of more of his mathematical papers. Casting directors will also find his suggestions appropriate, and probably surprising, when the time comes to adapt his novel for presentation on the screen.

The Inauguration on Alumni Day

■ Members of the Corporation, Faculty, Alumni, students, and their guests will be assembled, and the Boston Symphony Orchestra will play, when Julius A. Stratton, '23, accompanies an academic procession into the Great Court at 11:00 A.M. on Monday, June 15, to be inaugurated as the 11th President of M.I.T.

The Chairman of the Corporation, James R. Killian, Jr., '26, who was succeeded as President by Dr. Stratton last January 1, will conduct the investiture ceremony. Luncheon will be served in tents on the lawn afterwards, and the speakers then will include: Nathan M. Pusey, President of Harvard University; Lee A. DuBridge, President of the California Institute of Technology; Charles Odegaard, President of the University of Washington (which the new President attended for one year); and Claude Seippel, Vice-president of the Board of Swiss Federal Institute of Technology in Zurich (where the new President received his doctor of science degree).

Arrangements for the occasion have been made by a committee headed by E. P. Brooks, '17, Dean of the School of Industrial Management. It includes B. Alden Thresher, '20, William L. Taggart, Jr., '27, Gilbert M. Roddy, '31, Robert M. Kimball, '33, Donald P. Severance, '38, Philip A. Stoddard, '40, Gerard J. Stephenson, Jr., '59, President of the Undergraduate Association, and Professor Albert Bush-Brown.

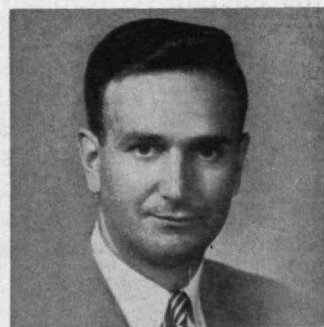
At commencement exercises the preceding Friday, June 12, John Cowles, President of the Minneapolis Star and Tribune Company, will speak.

A summary of class reunions to be held in June, just preceding or following Alumni Day, is presented on page 436 of this issue of *The Review*.

Professors Now

■ During the academic year now drawing to a close, there were 209 professors, 171 associate professors, and 211 assistant professors on the Faculty of M.I.T. Fifty-nine promotions were announced in May. The 17 men who are pictured here were promoted to the rank of full professors; 27 others became associate professors, and 15 became assistant professors.

Eighteen new appointments were announced at the same time. These included two Alumni, Stephen J. Kline, '52, and H. Philip Whitaker, '44, who became associate professors, and three Alumni, James C. Emery, '54, Cary J. King, '58, and James L. Stockard, '52, who became assistant professors. The new appointments to professorships are reported on page 430.



M. A. Abkowitz, '40
Naval Architecture



M. A. Adelman
Economics



R. B. Adler, '43
Electrical Engineering



N. C. Dahl, '52
Mechanical Engineering



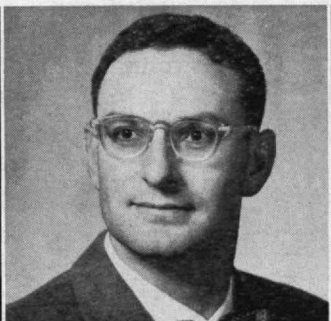
S. A. Goldblith, '40
Food Technology



D. N. Hume
Chemistry



H. W. Johnson
Industrial Management



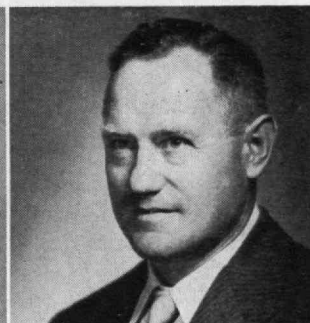
T. W. Lambe
Civil Engineering



F. A. McClintock, '42
Mechanical Engineering



S. J. Mason, '47
Electrical Engineering



P. Pigors
Economics



B. G. Rightmire, '41
Mechanical Engineering



L. Rodwin
City Planning



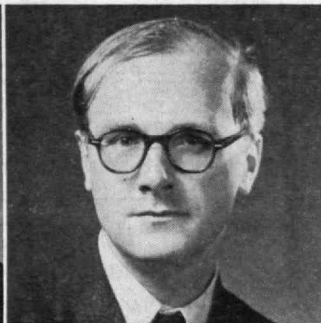
L. B. Rogers
Chemistry



C. N. Satterfield, '43
Chemical Engineering



I. M. Singer
Mathematics



P. D. Wall
Biology

The Alumni Association's Officers

■ The M.I.T. Alumni Association elected, in the balloting which ended April 25: Edward J. Hanley, '24, as its President for one year; William L. Taggart, Jr., '27, as Vice-president for two years; and Henry B. Backenstoss, '34, and Albert O. Wilson, Jr., '38, as members of the Executive Committee for two years.

The Association named as nominees, for five-year alumni term membership on the M.I.T. Corporation, William Webster, '23, John J. Wilson, '29, and James B. Fisk, '31.

To serve on the National Nominating Committee for three years, it elected: Charles B. Stuart, '34 (for District 8); William R. Wheeler, '25 (for District 9); and Jacob A. Samuelson, '40 (for District 10).

Class representatives elected to the Alumni Council for five years were: Andrew D. Fuller, '95, Elbert G. Allen, '00, Robert W. McLean, '05, Herbert S. Cleverdon, '10, Azel W. Mack, '15, Edwin D. Ryer, '20, F. Leroy Foster, '25, George P. Wadsworth, '30, John D. Hossfeld, '35, John L. Danforth, '40, William J. McKay, '45, John T. Weaver, '50, and C. Harry Schreiber, Jr., '55.

Results of the balloting were reported to the Alumni Council at its 338th meeting on April 27 at the M.I.T. Faculty Club. At the same meeting, the Executive Committee nominated and the Council elected committee members as follows:

Alumni Fund Board — George P. Wadsworth, '30, as consultant to the Fund Board.

Alumni Day — Philip H. Peters, '37, and Albert O. Wilson, Jr., '38.

Audit and Budget — Dwight C. Arnold, '27, for three years.

Class Reunions — William F. Wingard, '39, for six years.

Honorary Members — Gardner S. Gould, '07, for five years.

Midwinter Programs — William L. Taggart, Jr., '27, and Henry B. Backenstoss, '34.

Nominations for Departmental Visiting Committees — Karl L. Wildes, '22, and Russell L. Haden, Jr., '40, for three years.

Nominations for Alumni Council Representatives of M.I.T. Clubs — John L. Danforth, '40, and Robert H. Bliss, '48, for three years.

Personnel — Ralph H. Davis, '31, for one year; Robert E. Anslow, '54, for two years; and Robert A. Bittenbender, '40, for three years.

Our Neighbors, Near and Far

■ The M.I.T. Alumni Council, at its April meeting, heard about the earth's neighbors and the modern city's neighbors. Herbert G. Weiss, '40, of Lincoln Laboratory, described the way his group had examined every part of a radar system and found ways to create a reaction 28,000,000 miles away on Venus, and Robert C. Wood, Assistant Professor of Political Science,

This year's Alumni Fund totaled \$488,000 in April, Avery H. Stanton, '25, reported to the Alumni Council. This is \$43,000, or 36 per cent, more than the final figure last year.

described the immediate, personal problems of government in "the land of the station wagon and the septic tank" where one-fourth of America now lives.

Mr. Weiss called the establishment of radar contact with another planet "a community experiment" because it involved several disciplines. Radar's range was extended to a new frontier by the techniques developed, and radar now can be used as a tool to "tie down" the measurements of interplanetary distances.

Professor Wood emphasized the tendency of people to cluster in occupational, economic, and other groups as they migrate to satellite communities, and pictured vividly the few functions left to the central cities, the costly gray belts left between them and suburbia, and the difficulties of our thousands of small, independent political units.

Attendance at this meeting was unusually large — 158 members and guests were present — and a lively question period followed the two talks.

George Owen: 1871-1959

■ George Owen, '94, Professor of Naval Architecture, Emeritus, died on April 21 in Newton Center, Mass. Well known in the yachting world as a ship designer and racer, he taught in the Institute's Department of Naval Architecture and Marine Engineering from 1915 to 1941.

A native of Cambridge, Professor Owen was associated for a short time with the Herreshoff Manufacturing Company in Rhode Island, famous builder of yachts, and in 1907 began an independent career in shipbuilding and designing. By 1915, when he joined the Institute Faculty, he had designed and raced several championship yachts. He also designed the *Atlantis*, the research ketch of the Woods Hole Oceanographic Institution. Professor Owen's dinghies were introduced by the M.I.T. Nautical Association and are now widely used for collegiate racing. In appreciation of his enthusiastic support, the M.I.T. Nautical Association established the George Owen Trophy.

Professor Owen is survived by two children, George, Jr., of Milton, and Mrs. Florence O. Preble of Addison, Maine.

R. Colin Maclaurin: 1914-1959

■ R. Colin Maclaurin, son of the 6th President of M.I.T., died at the Massachusetts General Hospital on May 4. He had been a member of the administrative staff of the Institute for the last 13 years.

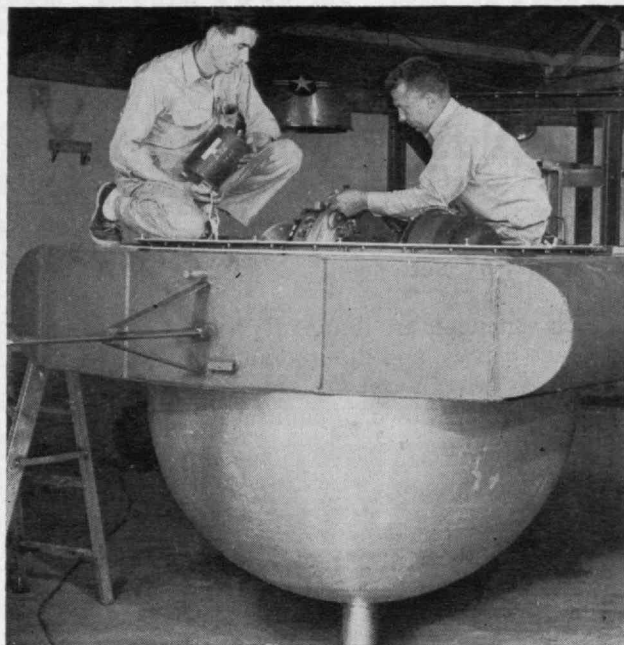
Mr. Maclaurin received the bachelor of science degree from Harvard University in 1938, served as safety engineer for the Bethlehem Steel Company at the Fore River Shipyard for two years, and in 1940 became an engineer for the J. P. Squire Company. He joined the Institute staff as Personnel Officer in 1946 after three years' service in the United States Navy. In 1954, he became director of General Services and served in that post until he was appointed assistant to the chancellor in 1958.

He is survived by his wife, Ellen Rhodes Maclaurin, and four children, Sheila, Peter Jerome, Richard Neil, and Colin, and by his brother, W. Rupert Maclaurin, Professor of Economics.

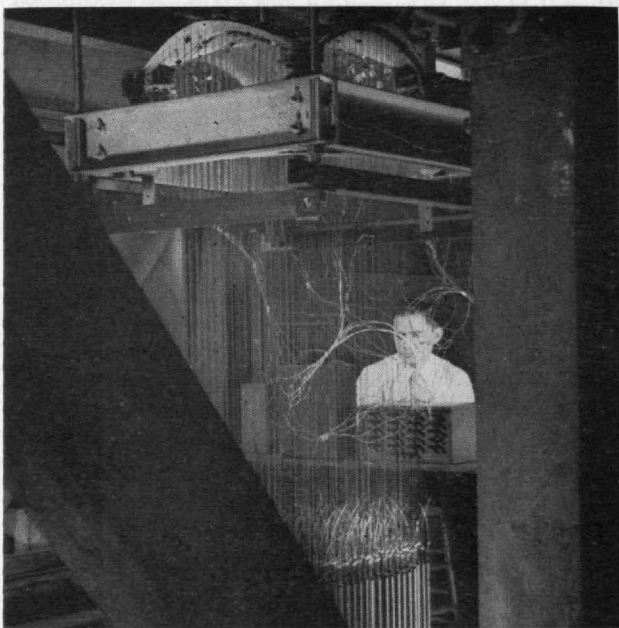


A Test for Guidance Apparatus

■ The inertial guidance system chosen for the Titan intercontinental ballistic missile was developed in the M.I.T. Instrumentation Laboratory, and will be produced by the AC Spark Plug Division of General Motors. The photos above, released when this was announced, show how the system was tested on the 18-ton centrifuge in the laboratory's Special Testing

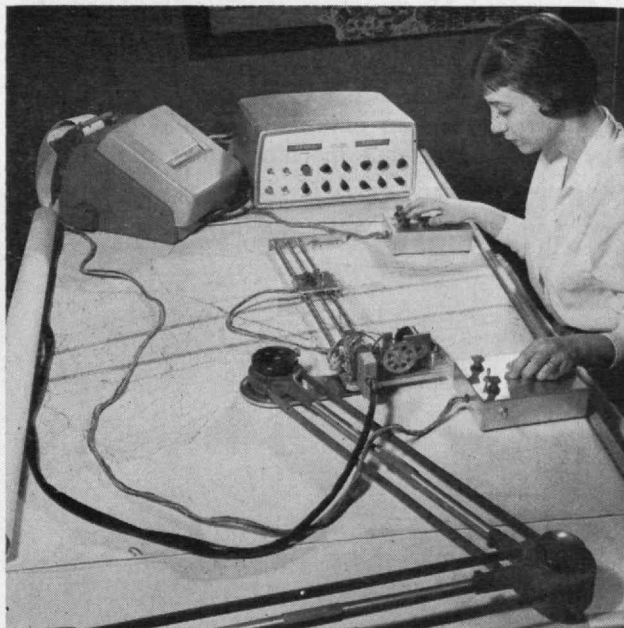


Facility at Hanscom Field in Bedford, Mass. Seated above the centrifuge hub is Agneta M. Mueller, daughter of Hans Mueller, Professor of Physics. Part of her job is to stay there and measure distortion of the centrifuge arm while it whirls at high speeds. Guidance equipment placed in the capsule (which you see behind her, and closeup in the photo at the right) on the tip of the arm is subjected to stresses and strains such as it must endure when it is used in a rocket.



A Post Office Is Studied

■ An aluminum scale model of a shell roof for a new post office in Providence, R.I., caught many visitors' eyes as it underwent stress analysis in the M.I.T. Civil Engineering Models Laboratory, under the supervision of Professors Hansen, Holley, and Biggs. Earlier, successive design studies for the structure were made on a series of plastic models.



A New Aid to Highway Engineering

■ As part of efforts to improve highway engineering with digital computers, E. Phillip Gladding, '57, teaching assistant in Civil Engineering at M.I.T., has designed the Digital Train Data Recorder shown above. With it, cross-section data in numerical form suitable for digital computations can be taken from a contour map about five times as fast as formerly.

M.I.T.'s New Language Laboratory

Optimum frequency requirements will be investigated with the recorders students now are using to perfect pronunciation

by JOSEPH R. APPLGATE

TRY to say *ich* not 'ish' . . . "That word is *les* not 'lay'."

Such comments are frequently heard in elementary language classes, and the student's response often is: "But that's what I did say." He can hear no difference between his own pronunciation and that of his instructor.

If there is enough time for oral practice, the instructor can usually get the student to produce the phonetic patterns of the foreign language with some degree of accuracy. But each one of 20 students has only three minutes to speak in an hour-long class, if there is no other activity, and there are many other things to be done — syntax must be explained, assignments checked, corrections made, and so forth.

Language teachers have been concerned for years about how the student is to get oral practice. The mass production of record players offered some hope, but teachers soon realized that, although listening helped students to understand a spoken language, it did little to increase their fluency or to remove flaws in their pronunciation.

Then tape recorders seemed to be a solution. If each student had a tape recorder, he could hear a lesson, record his imitation of it, and compare his pronunciation with that of an instructor. Unless each student had two tape recorders, however, he had to erase the master recording in order to record his imitation. Of course, an entire class could listen to a tape played on a single machine while each student

The Linguatrainer installed at M.I.T. this spring was developed to increase the utility of tape-recording equipment for students of foreign languages. This account of the problem and the work now under way was written by the Assistant Professor of Modern Languages who is in charge of this new laboratory.

recorded his responses on an individual machine. This method was adopted in several schools. It produced results that were moderately satisfactory, and "language laboratories," that is, listening and recording rooms, were established in schools throughout the country.

Some teachers, however, still were not satisfied. The equipment was expensive, and maintenance costs were high. Furthermore, most tape recorders have several control knobs, and more than one student who has worked diligently learning to pronounce a Parisian *r* has erased his recording by turning the wrong knob.

Professor William N. Locke, Head of the Department of Modern Languages at M.I.T., began consulting with electrical engineers three years ago, in an attempt to design recording and playback equipment that would satisfy the special needs of language laboratories. Last year a set of mechanical and electronic specifications was prepared. Now the results can be seen in Building 20 at M.I.T. A new electronic

(Concluded on page 432)



One student may be practicing Russian, another French, and another German, at any given moment in this laboratory.

The Generalized Electrical Machine

It's a fascinating part of the new curriculum developed under Prof. Gordon S. Brown's leadership in the Department of Electrical Engineering

by DAVID C. WHITE and HERBERT H. WOODSON

No one will live all of his life," says Margaret Mead, the anthropologist, "in the world into which he was born, and no one will die in the world in which he worked in his maturity."

Nowhere is this more obvious than among electrical engineers. As the inventors, designers, and producers of the devices needed to transmit and employ energy and information, they have been instantly affected by the waves racing through society in the wake of science. Their tools, skills, and concepts are used in nearly every kind of research; their services are demanded throughout all industry. They have been lured, consequently, into a vast array of specialties—radar, biological instrumentation, servomechanisms, nuclear devices, and even the social sciences.

So much had to be added so swiftly to the curricula of schools of electrical engineering during and immediately after the last big war that it became dangerously easy for both teachers and students to be distracted from the core of essential knowledge. The hasty piecemeal organization of new courses called for a major effort to reconstruct the whole program of departments of electrical engineering, so that a young man could maintain the proper perspective during his preparation for a professional career.

This was the problem confronting Professor Gordon S. Brown, '31, when he became head of the M.I.T. Department of Electrical Engineering. The body of knowledge which should serve as the foundation of an electrical engineer's education was no longer clearly defined in men's minds. The speed with which more scientific information was being acquired was increasing. So were society's requirements and industry's opportunities. What, and how, should young men be taught about electrical engineering?

A Conceptual Model

The question was debated both formally and over coffee cups. Scientists and industrialists were consulted, and the General Electric Company, through the General Electric Educational and Charitable Fund, agreed in 1954 to support for three years an effort which, by then, was under way at the Institute, to improve the program and facilities for instruction in electrical engineering.

"Educators traditionally say that their job is to train students to think," Professor Brown wrote. "Equally important is the job of ascertaining clearly what students should think about. . . .



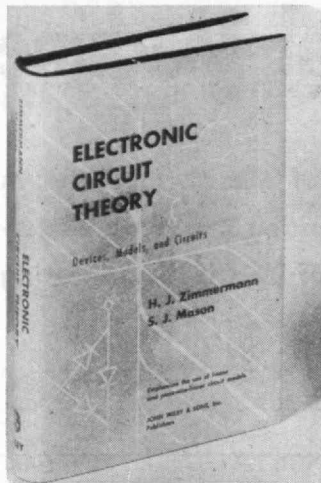
To appreciate this machine, duplicates of which soon will be found in schools throughout the land, one must know a bit about what has happened in the M.I.T. Department of Electrical Engineering. This is a generalized machine, conceived by Professors David C. White and Herbert H. Woodson, '51, whose explanation of the need for it will be found in the article that starts on this page. Shown examining the machine are (from left to right): Paul B. Shiring, who presented this one to M.I.T. on behalf of the Westinghouse Educational Foundation; President Stratton; and Professor White.

"The mission of electrical engineering education becomes clearer if one can visualize a nucleus or a conceptual model of electrical science. One statement of a conceptual model is:

"All so-called electrical devices are manifestations of how a creative engineer has exploited the interactions between charge carriers, their fields and materials.

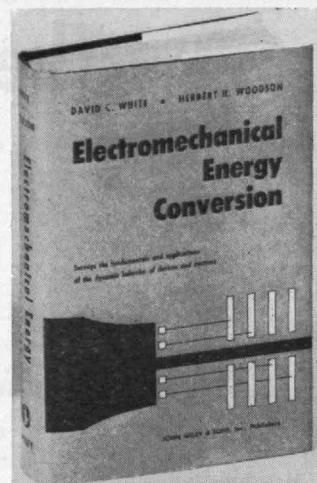
"The charge carriers are ions, electrons, and even the newcomer, the hole. The fields are static and dynamic. The materials interact with the fields by virtue of their physical properties, or magnetic domain structures.

"The engineer's goal in the exploitation of this conceptual model is to bring into existence an array of



ELECTRONIC CIRCUIT THEORY deals primarily with methods of analysis of electronic circuits. The authors devise models to approximate the characteristics of diodes, triodes, pentodes, transistors, and other control valves. The effect of circuit and signal on device operation is shown by means of locus plots. Basic circuit functions are classified as rectification and detection, wave shaping and amplification, and wave-form generation.

ELECTROMECHANICAL ENERGY CONVERSION begins with the fundamentals of analytical dynamics. These are used to analyze typical energy converters. Masses of detail about steady-state characteristics and device design have been discarded in favor of thorough treatment of dynamic characteristics of energy converters, feed-back control system theory, and their interrelations. The generalized machine's equation of motion is derived and used in the analyses of various machines. The book includes a detailed treatment of the dynamics of commutator machines, induction machines, and synchronous machines.



engineering systems to perform useful functions.

"Such a model touches every facet of an engineer's life, whether in research, in development, in manufacture, as in business."

With this kind of model in mind, the undergraduate curriculum at M.I.T. was overhauled by Professor Brown and his enthusiastic colleagues to:

1. Broaden and deepen the instruction in science;
2. Stimulate creative laboratory work;
3. Subordinate mention of vocational aspects of electrical engineering until after a strong foundation was built; and
4. Recognize differences in students' interests and talents by offering them their choice of many topics for study as seniors.

The New Textbooks

From the moment students entered the Institute, mathematics and physics were emphasized. In the Department of Electrical Engineering, they were introduced first to circuit theory, then taught the fundamentals of information processing and energy processing. Finally, they were offered a variety of more specialized professional courses.

This plan went into effect in 1953. The Class of 1955 was the first to complete the new curriculum. Members of previous classes who examine the program now may find very little of what they studied in it, but are likely to find, the Faculty hopes, much of what they now wish that they had studied.

New textbooks are being used for the core courses. Professor Ernst A. Guillemin, '24, had started to revise *Electric Circuit Theory* before Professor Brown became head of the Department, and his *Introductory Circuit Theory*, published in 1953, became the foundation stone of this part of the program. Two other texts have been published:

Electronic Circuit Theory: Designs, Models and Circuits, by H. J. Zimmermann, '42, and S. J. Mason, '47, and

Electromechanical Energy Conversion, by David C. White and Herbert H. Woodson, '51.

Three more books in this series by men responsible for the course revisions will be available this fall:

Electronic Circuits, Signals and Systems, by Mason and Zimmermann;

Electromagnetic Fields, Energy and Forces, by R. M.

Fano, '41, L. J. Chu, '35, and R. B. Adler, '43; and *Electromagnetic Energy Transmission and Radiation*, by Adler, Chu, and Fano.

An addition to the core curriculum called "molecular engineering," which was taught for the first time last fall, under the leadership of David J. Epstein, '49, Associate Professor of Electrical Engineering, will probably result in another book in about three years. Critical attention also has been given to the senior elective and graduate courses in the Department.

The Equipment Needed

The new lectures, new books, and new examinations necessitated major changes in the laboratory work, too.

It was possible, in the circuit and electronic laboratories, to give students a large amount of freedom to design their own experiments, because electronic components were available in a form which permitted one to set up a desired circuit in very little time. Circuit experiments include basic measurement techniques, using voltmeters, oscilloscopes, bridges, and so forth, to study the properties of circuits of resistors, capacitors, and inductors. The electronic laboratory emphasizes the use of vacuum tubes and transistors which can easily be interconnected for a variety of applications.

Something different was needed to study energy conversion in the same way. There was not as much flexibility in the choice and use of components. The electrical machines used in the laboratory were conventional types. Many were big and cumbersome, and any dynamic studies placed severe demands on the power systems and measuring apparatus. The authors undertook, therefore, the development of a more flexible piece of equipment to back up their approach in the classroom to electromechanical energy conversion.

So a generalized machine was conceived, developed, and built. It became first one, then another, type of machine when connections at its terminals were changed. With such a machine, students could follow new analytical approaches to electromechanical energy in the laboratory and see the unity underlying all machine types which was being emphasized.

Eight of these generalized units were built in the Electrical Engineering Shop at the Institute under the supervision of Henry J. Laurence, with the funds which General Electric had provided. They were designed for study of the dynamic behavior of electro-

mechanical systems, and this meant that a dynamic torque meter had to be developed for use with them. Such a torque meter, based on a magnetostrictive effect, was developed by Michael J. O'Neill, '54, a graduate student. This gave workers in the energy-conversion laboratory some of the same flexibility that was attained with basic electrical components in the circuits theory and electronics laboratories.

Now the generalized machine has become a means of conveying the M.I.T. Faculty's ideas to other colleges and universities. This has happened as a result of a two-week symposium sponsored by the National Science Foundation, with General Electric and Westinghouse help, in 1957. It brought more than 100 professors from other schools to the Institute. During a critical review of the electrical engineering curriculum here, they were shown the generalized machine, and the interest which most of them showed in it prompted the Westinghouse Electric Corporation to put such a machine into production.

Other Schools Benefit

The Westinghouse Generalized Machine's characteristics are superior to those of its predecessors, and its torque meter is a product of improved manufacturing techniques. The first Westinghouse machine was given to M.I.T. this spring. Now the Westinghouse Educational Foundation is distributing these machines to departments of electrical engineering in 149 other American colleges and universities, to help them develop their electrical energy conversion laboratories.

"Universities have had thrust upon them an ever-increasing responsibility for training engineers in an ever-increasing variety of skills," a Westinghouse spokesman has reminded industrialists. "The tradi-

tional approach has been to turn out specialists in specific fields. Now, however, college engineering departments are adapting their programs to a modern concept: electrical engineers must have a broader understanding of the basic science of engineering.

"These modern instruction programs, in turn, demand laboratory equipment as modern as the teaching techniques used by the instructor. We hope our equipment will help meet that need."

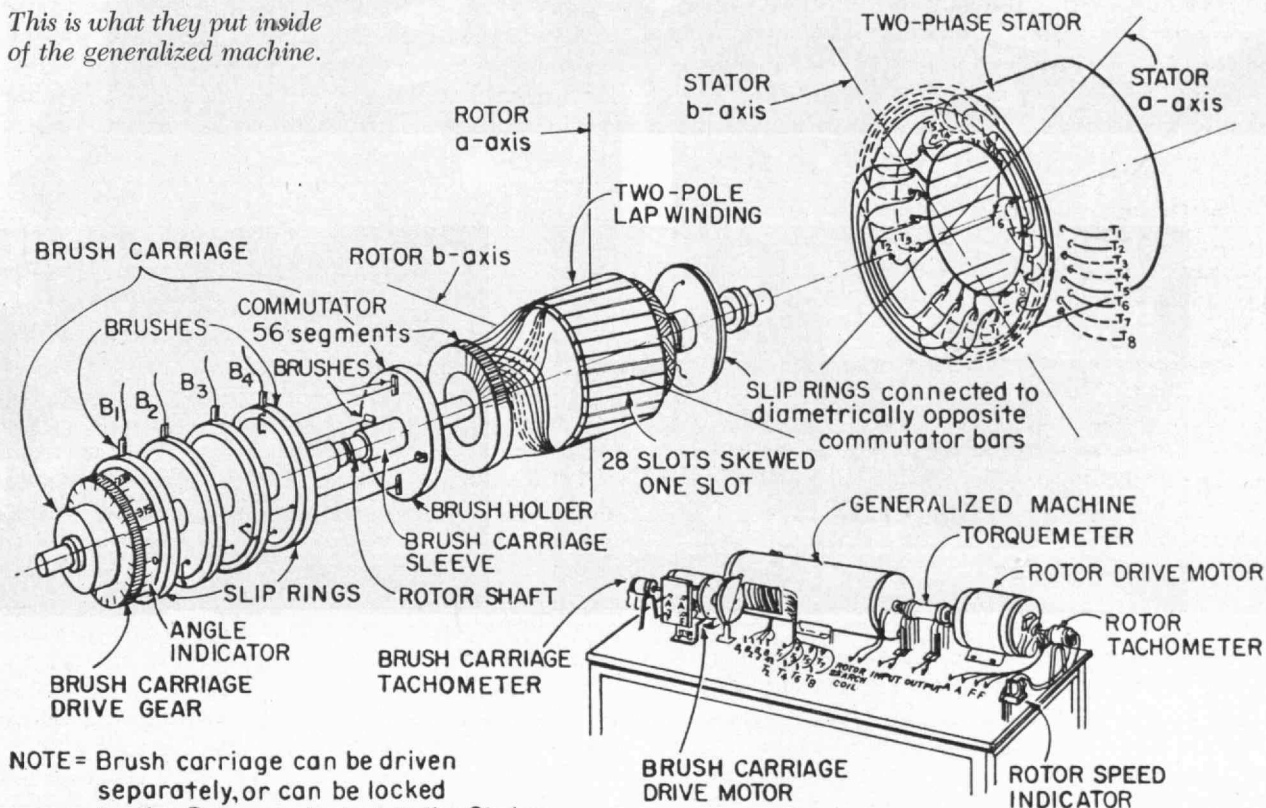
The Next Step

This is but one of the many ways in which industry has helped the schools prepare young men for careers in a rapidly changing world. The generalized machine was only a chapter in a continuing story. Without vigorous Faculty research in energy conversion, the new program will not be secure. Bigger and more open-ended programs of on-campus research are needed now, and industry can help still more by sponsoring such programs.

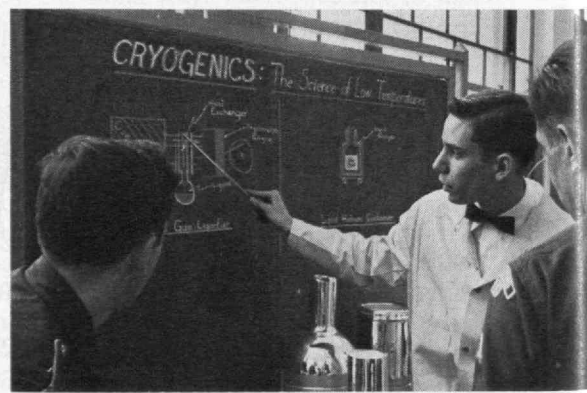
As Margaret Mead also has observed, education was once mainly *vertical* transmission of tried and true information from an older to a younger generation of men, but now also must stress *lateral* transmission among contemporaries of information about what has just been discovered, invented, created, manufactured, or marketed. Industry-sponsored research in the universities can facilitate the lateral exchanges needed both by the schools and by industry.

A long step forward, taken under Professor Brown's leadership, was nearing completion when he was promoted this spring to the post of Dean of the School of Engineering. Another, possibly bigger, step is being discussed now by the Faculty of the Department of Electrical Engineering, both formally and informally.

This is what they put inside of the generalized machine.

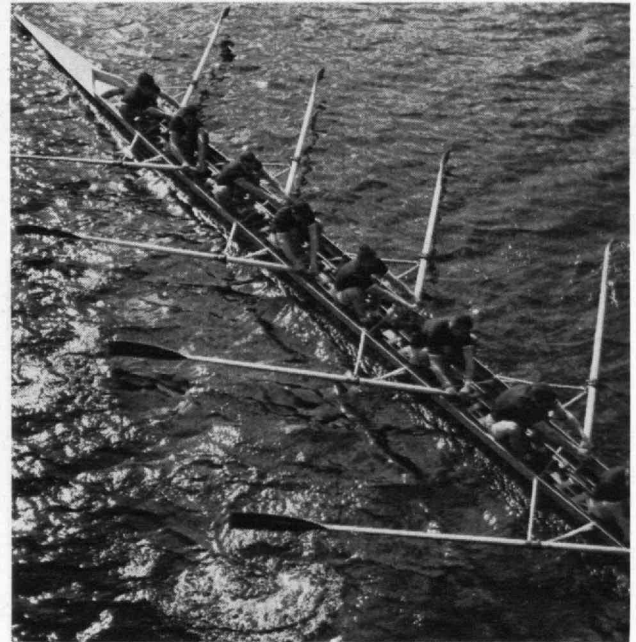
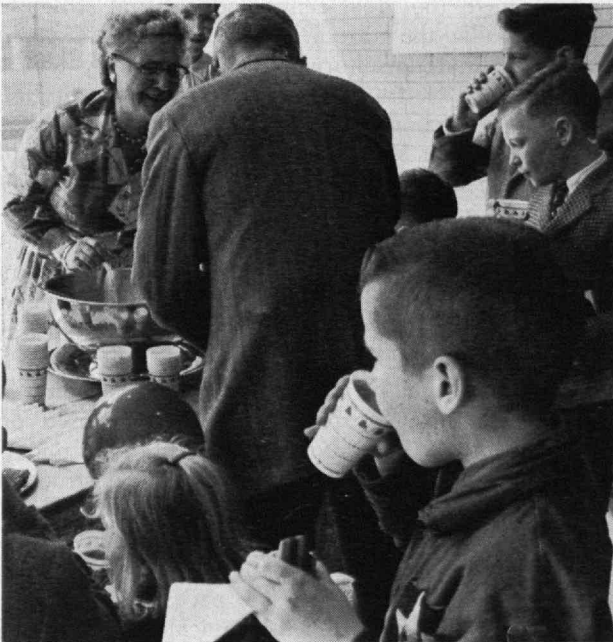
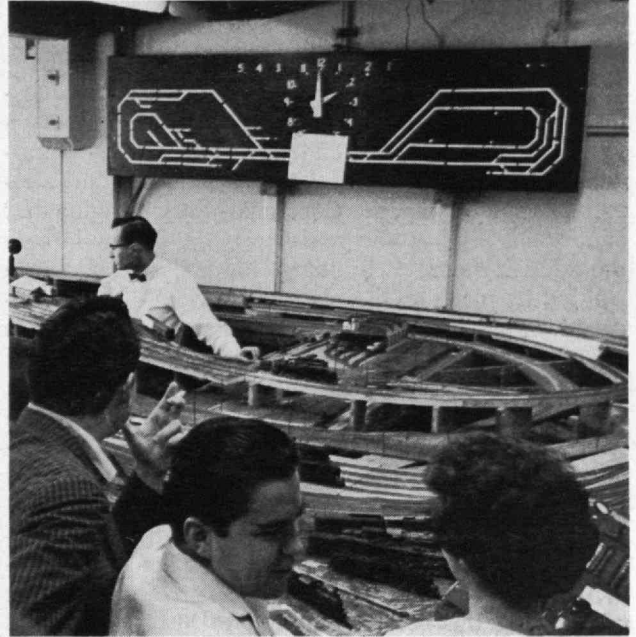


Open House Day at M.I.T.



Thousands of people swarmed through the corridors of M.I.T. all afternoon on Saturday, May 2, to catch some of the flavor of the Institute's educational programs in engineering, science, architecture, the humanities, and industrial management. It was the biennial Open House Day arranged by students, and there were lectures, demonstrations, films, exhibits, re-

freshments, music, and athletic events wherever one wandered. Colored arrows marked the routes of six different tours of the laboratories, libraries, and departmental displays, and when a fellow's feet gave out he could relax on the lawn and listen to the M. I. T. Concert Band. These pictures tell more quickly than words who came and what they saw and did.



A Proper Environment for Students

For many years the Institute's Alumni have helped it solve the growing and changing problems of housing accommodations

by F. G. FASSETT, JR., Dean of Residence

THERE are many gauges of the evolution of educational institutions. One — particularly apt for such a school as the Institute — is the translation of equipment in laboratories and classrooms. Thus, fondly remembered by many, the Centennial Corliss engine that once stood mighty and massive in the Steam Lab in the ground floor of Building Three has long since yielded its place on the plates to devices of lesser impressiveness though no doubt greater efficiency. So is the growth of knowledge reflected. Another gauge of university evolution is the record of bricks and mortar, especially the bricks and mortar of the buildings where students live. The Harvard Yard presents one of the most comprehensive of records of this kind in the United States.

Things which have been happening lately at the Institute — and others which are in prospect made more immediate by the action of Alumni — give special point to applying this second criterion to M.I.T. in the 43 years that have passed since its transfer from Boston to Cambridge gave the institution new and lasting focus. The record is less lengthy than Harvard's, but appears in many respects fully as varied.

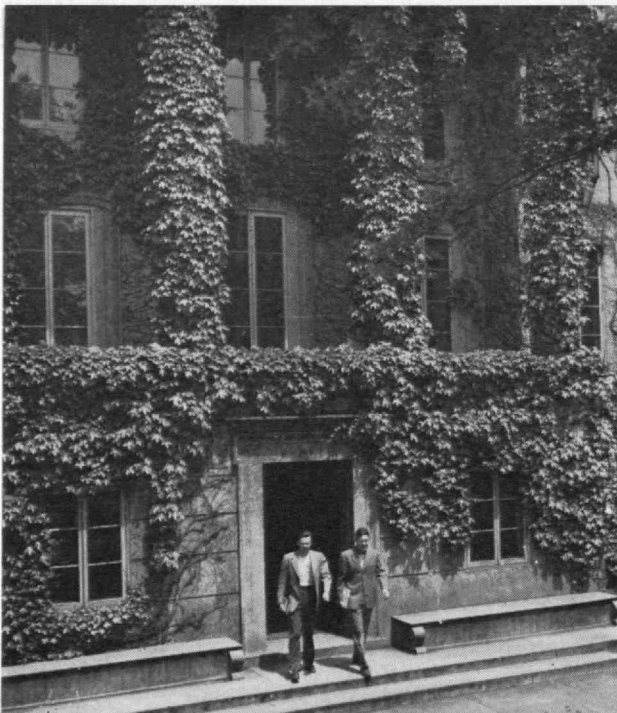
During its Boston years, the Institute was without accommodation for its students. Some resided in fraternities, but most of the men either lived at home or rented rooms as near as they could to "the Tech on

Boylston Street." Throughout those years, there had been expressions of the need and desire for better centers for student life. Hence the construction of the L-shaped dormitory surrounding the garden of the President's house on the Cambridge side was regarded as a milestone of much importance. Consisting of six entries, this structure housed something more than 200 students when operations began in November, 1916, fraternities at first occupying the two end units of the building. A. Raymond Brooks, '17, headed the student government organization. Undergraduate enrollment that year was 1,912; hence it is no surprise that pressure for additional dormitory space was soon expressed, and grew stronger as enrollment skyrocketed, reaching in the autumn of 1919 a total of 3,078. In the academic year, 1922-1923, it was recorded that 200 men were housed in the dormitory and 700 in fraternities.

The Class of 1893 then pledged \$100,000 for a dormitory unit to accommodate 80 men, to be built to plans by Welles Bosworth, '89, whose genius not only had designed the great central educational structure which is today the core of M.I.T., but also had given to the original dormitory a physical quality and a warm-hearted charm that sets it apart among its fellows today. Ground was broken September 11, 1923, for the building which represents the beginning of alumni concern for undergraduate residence itself apart from general Institute development; in the following autumn, the dormitory unit known today as Bemis Hall was in use. The fraternities had relinquished their tenancy of entries in the first dormitory, and 292 dormitory men were in residence at the start of the 1924-1925 academic year. Leicester L. Hamilton, '14, then began his 25 years of service as chairman of the Dormitory Board. The students housed on campus were still only about 10 per cent of the undergraduate body, and the need for further construction was quite plain.

It was given emphatic formulation by Charles Hayden, '90, the 32d President of the Alumni Association, who in January, 1926, cited the necessity that more 40-man units be built, and that quickly. They would cost \$100,000 each, and in March the Alumni Council launched a million-dollar campaign to finance new construction. Soon, Dean Alfred E. Burton returned from retirement to take the lead in the work; by November, 1927, construction had begun; and in

Six entries of the Institute's first dormitory near the President's home were named to honor Faculty members.



The Everett Moore Baker House opened in 1949 is known around the world because of its distinctive architecture.

March, 1928, the two new entries known today as Walcott and Goodale were in use, so that 428 undergraduate men had homes on the campus. The number accommodated had gained on the total registered, but there was still a serious discrepancy, for undergraduate enrollment that spring was nearly 2,400. There was clearly more work to be done.

It took the form of another three-entry structure — the one known in today's undergraduate vernacular as the "West Parallel" — ground for which was broken on March 24, 1930. In October of that year, the building was ready for occupancy, giving the Institute a total of 630 beds for undergraduate students. On February 13, 1931, at a dinner of the Alumni Council with the students living in the dormitories, the completion of the west parallel was celebrated and Dean Samuel C. Prescott, '94, as chairman of a special committee of the Alumni Council to name the new units, announced that they would be known as the Alumni Group.

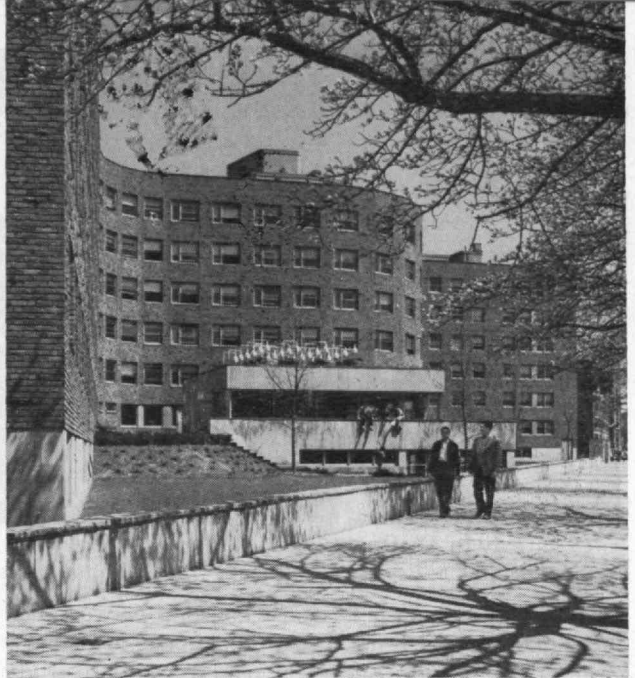
Those of the east parallel were named for Charles W. Goodale, '75; A. Farwell Bemis, '93, who served as the 17th President of the Alumni Association; and William W. Walcott, '01. The entries of the west parallel honored James Phinney Munroe, '82, who had been the sixth president of the Alumni Association in 1894–1896, and the third Editor of *The Technology Review*; Charles Hayden, '90, who in 1925–1926 was the 32d president of the Alumni Association, and Kenneth F. Wood, '94.

Undergraduate enrollment at that time — the start of the Great Depression — was about 2,600, and so the proportion that could be accommodated on campus was regarded as considerably more nearly satisfactory than in the past. There was no more undergraduate dormitory construction, in fact, until the pressure of veterans returning from another war made it essential.

Baker and Burton Houses

At the start of the first academic year after the end of World War II, 1,160 undergraduates were enrolled; a year later, 3,811; a year later, 4,138. Barracks accommodations in wartime temporary structures were a partial answer to the problem; another was conversion of double rooms to triple occupancy, and singles to doubles in the existing dormitories. The partial answers taken together, however, were distinctly insufficient. New space had to be had. The decisions taken as a result of this need were a real turning point in the history of the Institute, for they summed up to the decision that it should become a residential university.

The first step was the construction of the dormitory now known as the Everett Moore Baker House, to designs by the noted Finnish architect Alvar Aalto. The Alumni Fund Board appropriated a half million dollars to aid the project. Opened at the start of the academic year 1949–1950, Baker House, which accommodates 350 students, has become known around the world for its architectural distinction. In keeping with the residential objective, its design included a kitchen and dining room for the members of the House, together with ample lounge space. An apartment for a faculty family was also an integral part of the design,



self-contained and secluded, yet with convenient access to the main body of the House.

Nearly 1,000 undergraduate men could be housed on campus when Baker opened, and two years later the figure was upped by more than one half by the conversion of the former Riverside Apartments into a dormitory. The Institute purchased the apartment house while Baker House was under construction. When first adapted to dormitory use, it had quarters for nearly 600 students, but this figure was reduced by the later construction of lounge areas. The building is in two main sections: one now known as the Alfred Edgar Burton House, honoring the late Dean Burton; and the other as Conner Hall, in memory of Arthur J. Conner, '88. Largest of the Institute's undergraduate residences, it has been marked by a notable unity of spirit from the beginning.

The four undergraduate centers whose history has been summarized here take care of 1,537 of the 3,587 undergraduate men now in the Institute — about two-thirds of the 2,480 who are not residents of fraternity houses. The proportion has changed markedly from the 1917 situation.

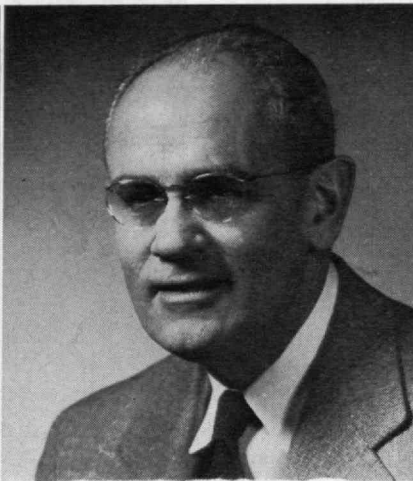
Graduate House

The growth of graduate enrollment at M.I.T., from 42 in 1917–1918 to 2,672 in 1958–1959, has obviously posed new problems of accommodation. These have been especially acute in the years since World War II; graduate registration in 1946–1947 was 1,361, just about half the present figure. Few of the major questions to be resolved at the Institute in the years ahead are more important or more complex than how best to accommodate these men, not merely to provide shelter, but also to secure for them full opportunity for study and the interchange of ideas essential to the richest intellectual development. There is excellent precedent in the arrangements for graduate residence made thus far, even though numbers have outrun them.

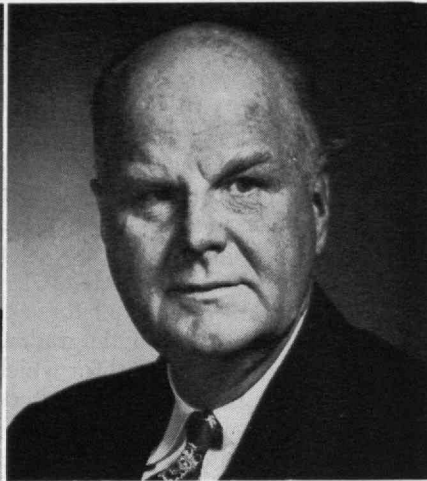
In the lean depression years in the early 1930's, undergraduate enrollment was strongly affected, whilst



Edwin D. Ryer, '20
Alumni Fund Board Chairman



Avery A. Ashdown, '24
Master of the Graduate House



Leicester F. Hamilton, '14
Former Dormitory Board Chairman

graduate enrollment held nearly constant between 500 and 600. President Karl T. Compton, to whom the long-term value and necessity of increased graduate study at the Institute were crystal clear, and who had brought with him to the Institute from his Princeton experience deep insight into the potentialities of residence as a stimulus and enrichment of advanced study, led in making an opportunity of this combination of circumstances. Three entries of the Faculty Houses were set apart as a Graduate House, inaugurated at a housewarming on October 7, 1933, when 77 graduate men took up residence.

Of much import was the appointment of Professor Avery A. Ashdown, '24, as Master of the Graduate House. The experiment, unique at the time except for comparable arrangements at Princeton, was so successful that in June, 1934, all six entries were reserved for graduate use, and when the Riverbank Court Hotel at the corner of Massachusetts Avenue and Memorial Drive became available, it was purchased by the Institute and was opened, in the autumn of 1938, as the Graduate House. Today some 450 graduate men are in residence, and Professor Ashdown as Master continues to lead in the program of discussions, house meetings, house dinners, and other occasions in which advanced students from all over the world share ideas among themselves and with other scholars.

The Graduate House has set a goal for all student life at the Institute, however, it may have been overwhelmed by the staggering increase in graduate enrollment. And it is, of course, a bachelors' hall.

The Married Students

In 1917, there was not, in all probability, a married man registered as an undergraduate or a graduate student at the Institute. In 1959, nearly 1,300 of our 6,200 students are married. Over the last few years, married undergraduates have been about 5 to 10 per cent of the total; graduates have made up the rest. The great influx of married students commenced immediately after World War II. Hence in 1945, the Institute, on land west of Massachusetts Avenue, built a village to house 100 families in small temporary houses — Westgate. No sooner finished than filled, it was followed in the next year by the erection of 17 ten-family barracks secured from the Navy — Westgate

West. The City of Cambridge co-operated in the venture by permitting — through waiver of the building code — the erection of these flammable temporary structures in a fire zone, and this waiver was continued until this year. The once-temporary structures have outlived their reliability, and the village of Westgate and Westgate West is now in the final stages of demolition. By the end of summer, it will have joined the Corliss engine in the limbo of the past. During its career, 3,261 families, totaling some 14,000 souls, will have lived their student lives there, sharing in the responsibilities of operation, administration, and government through the Westgate Council. As the Long-Range Planning Committee considers what may yet be done in the use of Institute land in the effort to provide a homelike environment for some if not all married students, it is to be hoped that further opportunity for this kind of civic education will be part and parcel of the program.

For Women Students

For the distaff side of the Institute's student body, the first residential provision was made under the leadership of Mrs. Karl T. Compton in 1946, when a dwelling at 120 Bay State Road in Boston became the M.I.T. Women's Dormitory, with 17 women students and a house mother in residence. Ten years later, the Women's Dormitory was reserved for first-year women students. For the upperclasswomen and graduate women, a section of the Bexley Hall apartment house, opposite the Rogers Building on Massachusetts Avenue in Cambridge, was taken over and equipped as apartment quarters for groups of two or three women.

Begun frankly as an experiment, the plan has met enthusiastic response. Thirty-three women can be housed in the structure; undergraduates and graduates are about evenly divided in the group. Government of the house rests with an elected house committee and a member of the Faculty and his wife are in residence in the house.

The Fraternity Houses

In the male undergraduate world at the Institute, the kind of co-operative accomplishment in self-government seen at Westgate was long ago achieved by

(Continued on page 422)

Lessons from the History of Flight

An aviation pioneer describes wrong trends, unrealized, and right trends, unappreciated

by GROVER LOENING

THE growth of U.S. air transportation from nothing in 1920 to 24 billion passenger miles in 1958, is merely a beginning. We will shortly progress into supersonic flying—all over the world.

There is much left to do to perfect our utilization of the air ocean in which we live. Tolerable noise, vibration, and acceleration must accompany supersonic flight. And greater safety!

Some clear and not too pleasant lessons are to be learned from a questioning and reflective perusal of the more than half century in which we have developed our air travel, air logistics, and air road-to-everywhere usage. One of the most outstanding lessons that we see clearly, in such a review, is how often designers and constructors have failed to finish up what was started.

Many a novel but highly significant development, idea, or suggestion has lain on our doorstep for years, unappreciated. Let us look at examples:

In America, where flying was born, the biplane type of flying machine dominated our picture from the very start for almost 25 years, despite the obvious success of the monoplane in France and the fundamental correctness of its aerodynamics. Today the monoplane, strut-braced or cantilever, has completely swept the field in all types and sizes, and the only biplane left is occasionally seen towing an advertising sign or doing crop dusting.

In earlier years, landing gears started with skids to which wheels were added, but the skids were left on, only to become the cause of many

Here is part of the Lester D. Gardner lecture delivered at M.I.T. this spring by Grover Loening before a distinguished group of aviation pioneers. Mr. Loening was the first aeronautical engineer employed by the U. S. Army, a founder of the Institute of the Aeronautical Sciences, Pan American Airways, and the Grumman Aircraft Engineering Corporation, and now is director of the Flight Safety Foundation and consultant to the Navy and Air Force.

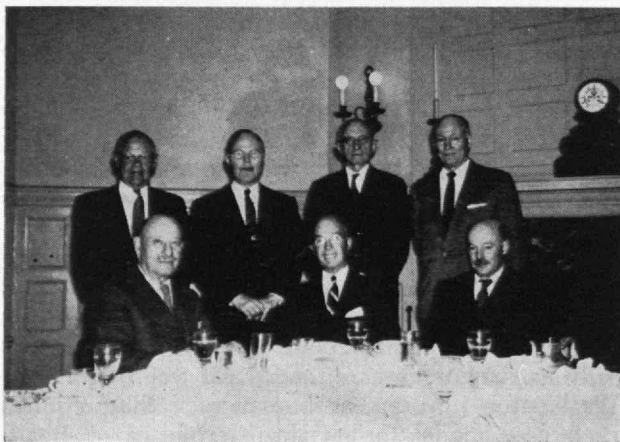
wrecks when they broke on hard landings. From the very beginning, wheels alone were, obviously, correct. In Europe, Blériot, and in America, Curtiss, were outstanding in realizing this, and in the case of Curtiss the practical three-wheel gear was constantly being demonstrated as successful. Practically no one else saw this. Even Curtiss gave it up. And yet some 35 years later the three-wheel gear with level fuselage configuration is found in practically worldwide usage.

Variable-pitch propellers were suggested at an early date—a practical one by Hamilton in the 1920's—but it took 8 or 10 years for them to come into wide and general use.

Engine Positions

On the early configurations in America, engines were at the side of, or behind, the aviator. In the case of the original Wright design, two large geared-down propellers were needed to translate 12 horsepower into effective enough thrust to fly 800 pounds; in fact, this was one of the secrets of this plane's success. As more powerful engines came along, the gearing down was not needed, but the engines remained behind the pilot.

Safety in crashes was, of course, the outstanding reason for the adoption of the tractor-type. In the early planes, when they were in the 40 miles per hour category, the seats were not enclosed. The advent of the fuselage with enclosed seating was stimulated, of course, by the use of the tractor engine. But it is remarkable to note that the obvious further streamlining and closing in of the fuselage lagged for a few years. Nieuport, in his remarkable and revolutionary little monoplane of 1910 which swept the field in competitive performance, practically started this vogue. But it was not really until some 10 or 15 years later that the majority of the aviators, including the military, had



Shown above, after the Lester D. Gardner lecture which was delivered in Kresge Auditorium on April 10, are (in front, left to right): Luis deFlores, '11, Grover Loening, Jerome C. Hunsaker, '12. Standing: Elmer Sperry, Jr., Edwin E. Aldrin, '17, Commander F. G. Coburn, '07, and Rear Admiral C. E. Rosendahl.



The author designed this Hispano-Suiza powered, two-place fighter for the U.S. Army Air Corps during World War I.

discovered that they need not have their heads out in the open air in order to fly.

Flaps and slots to slow down landing speeds, or rather, to permit higher cruising speeds and heavier loads without too great a landing penalty, kicked around, too, for a long time — much too long.

Materials of Construction

Materials of construction of aircraft have gone through many cycles. Even for several years after World War I, and in spite of the Zeppelin duralumen development, aluminum was suspect as a structural material. So much so that the famous Specification 100-A of the Navy prohibited the use of aluminum in any structural part of aircraft. This was a pertinent example of how too rigid specifications, based on what was good practice in previous years, can prevent future development.

Today we face a similar situation in prohibitions against fiberglass or plastic-stressed structures because it is so difficult, theoretically, to calculate and check the stressed condition. Yet plastics may well have as great a future in aircraft structures as dural-stressed skin monocoques and wing panels had 30 years ago. New alloys — titanium and others — are beckoning alluringly, like fiberglass, for a chance to show their worth. Also "sandwich" materials are most promising. Will we still be slow to pick up the ball?

The lesson one seems to gather from these and many other instances is the unpleasant one that aviators' likes and dislikes were given too much weight, and hence discouraged the engineers from perfecting their developments. In retrospect, one finds many instances where worthy developments were ignored or abandoned because they were politically, in a public relations way, unwise. Many a wing flutter that scared a test pilot condemned to utter oblivion an airplane that had structural or configuration features of great importance and advantage. Had the customer and the builder been patient or wise enough to work out such bugs, success would have followed more quickly.

On the other side of the picture, many an airplane with little commercial or military value was for years used in a most popular way because the

upholstery and the windshield were well worked out, and because a lucky combination of slip stream and wing flow (totally unforeseen by the designer) gave unusually good control on landing — which made it easy for the pilot. Another personal prejudice revolved around ease of egress in case of accident.

Bureaucratic Drags

As the years went on and brought more scientific engineering appraisal of new aircraft in test flying, there grew up other drags on development, causing unnecessary time lags from day of inception to the hardware-in-use stage. These were largely bureaucratic.

In 1926, after the original Civil Aeronautics Act, reinforced by the later enactment of 1938, the government was put into the position of passing judgment on the aircraft that our industry wished to sell to the public, by establishment of the Certificate of Air-Worthiness procedure. At the time, we, unthinkingly, accepted this, largely because of the supposed great risk to which a gullible public would be subjected if offered all kinds of aircraft that might fall apart in the air.

And then the bureaucracy really got to work. The inspection and engineering staffs of the Civil Aeronautics organizations of the government had to grow with each page of more and more detailed specification called for by Congress and law. But here is the fallacy: by necessity, such specifications had to specify last year's aircraft, because the authors of such specifications were not inventors, or developers in the imagination business. Here is an example:

After World War II, in 1946, Robert Fulton designed and built in Connecticut an interesting new aircraft called the "Airphibian," in which the body contained the engine, and was a perfectly operable small car from which the wings could be detached. Fulton never complained, but went through the Civil Aeronautics Certification procedure. He was a very expert designer and skillful builder. He would have had an immediate market from 1947 to 1950, but it was not until 1952 that he had managed finally to finish up completely the Civil Aeronautics procedure, and then it was too late. And when it was all through, the procedure had caused practically no changes whatever in the aircraft, but had changed many, many pages of Civil Aeronautics rules by waivers and allowances. Not all cases of C.A.A. certification have been as bad as this, and recently there has been much improvement — not in the law, but in the more liberal way the old C.A.A. and now the Federal Aeronautics Agency are interpreting their mandate.

The automobile in the hands of the public is fully as dangerous as aircraft, and yet there is no Washington government bureaucracy that requires each new model to have a "Certificate of Road-Worthiness." Companies that have survived have done so only by the most careful designing and the most exacting test procedures of their own.

Here is a lesson that we could apply to small-sized, private vehicle aircraft almost at once. Of

course, when we contemplate huge air transports carrying over 100 passengers, aircraft growing to the stature of shipping, some government inspection and certification may be needed.

In this certification and inspection area, should not the insurance companies take a much greater role — as Lloyds does in shipping? Let us think hard on any system that will get us away from a cumbersome governmental one.

Another bureaucratic drag on progress is in the military — in the system involved in what the Air Force calls “the Requirements Division.” Here we are supposed to have the finalized requirements for new aircraft. For purely military items, such as the need to carry a larger gun or a different kind of bomb, this is fully justified. But it has unconsciously been extended by the Pentagon bureaucracy to cover too many broad features and types of aircraft.

Had an inventor appeared at the Requirements Division of the Air Force as recently as 1953 with a very effective way to muffle the noise of aircraft power plants without sacrifice of performance, the bureaucratic system would have informed him: “There is no requirement for such a development.” Of course, very intelligent and progressive officers sometimes alter these procedures on their own, and a new requirement is, in too rare instances, created.

Russia seems to move quicker in reaching the hardware-in-use stage after early inception. As near as we can ascertain, the Russians do not use our system. This we had better study. Instead of a “Requirements Division,” we had perhaps better have a “Stimulation Division.”

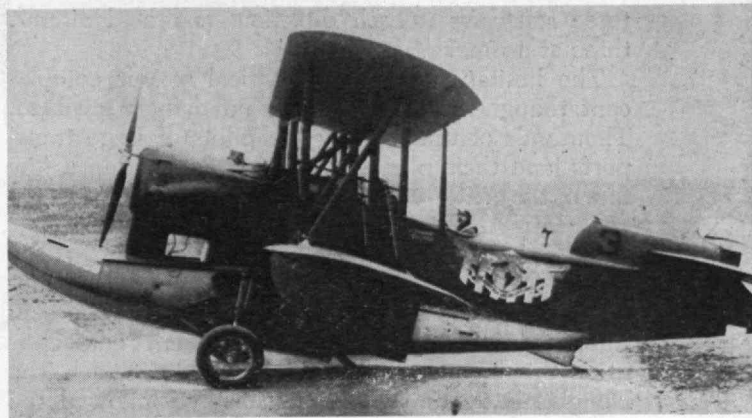
Aircraft Operation

Let us look at today's aircraft operation for some more lessons and possibly anticipate some future troubles.

Today all aircraft can be spun and recovered with safety; 45 years ago, this was not the case. As a matter of fact, up to 1913, the “spinning nose dive” or the deadly “spiral dive from air pockets” was the disheartening cause of accident after accident. At Dayton in 1913, we were the witnesses of a very vital historical moment in airplane operation. This was when Orville Wright, so discouraged by the accidents that were happening to his exhibition fliers and to a whole series of Army fliers (Hazelhurst, Love, Kelly, and others), was determined to test out what was happening.

It was not long before he, himself, came back from these test flights smiling instead of grim, because he had discovered what a “spin” was, and how to get out of it: by pushing forward on the controls — and why so many aviators had been killed: by pulling back on the controls at the wrong time.

Now, some 46 years later, when we begin to fly through the sound barrier, we discover a brief moment when controls are reversed. And also today we are somewhat plagued by “pitch-up” in the control of supersonic aircraft. Recently a jet air liner suddenly dove 29,000 feet. Are we seeing



A Loening amphibian, now in the Smithsonian Institution, was one of the first U.S. planes with retractable landing gear.

manifestations of some new operational characteristic of swept-wing aircraft which may require some additional controls other than the ones we have provided?

The operation of aircraft has become very complex, due to the constant addition of more and more instruments. We have gone a long way from our first instruments — the string for sideslip, wire whistling for speed, and the railroad track for navigation!

Are our present instruments really the ones we should have? Has not the barometric altimeter caused us so many accidents that we should long ago have gone to something better? Our automatic pilots are all based on known flying procedures. What if the new types required some new controls of flying procedure, or crossed controls to prevent “pitch-up” or to prevent the swept-wing dive? It is exactly in such areas that we are much too complacent and that we leave lying on our doorstep, without enough concern therein, problems that should alert us more quickly to the utmost inquiry.

Our Noisy Airports

Noise abatement is now very noisily clamoring on our doorstep, but we should learn from our history that abatement is not now the answer. The answer is to design a power plant with a fundamental limit on noise, in its original design, such as there is on its fuel consumption and weight. We can soundproof against internal noise rather well in a cabin, but external noise has made the airplane a very undesirable neighbor, even to the extent of having it ruled out in many places. Have we, through these formative years, appreciated this enough? This one can be answered quickly: we certainly have not.

Literally billions of dollars are being spent on airports around the world. In too many instances, particularly in America, these are one-runway airports; in other words, a one-track railroad. It is difficult to understand why this is so, when we stop to remember that whole squadrons of aircraft during World War II (and still now) land on reasonably wide runways within a few feet of each other at the same time, and similarly take off in formation. Why then should not an airport have at least

three runaways in each direction, and land aircraft three at a time?

The hesitation on this is typical of our complacent thoughtlessness. There is no danger involved. Thousands of times a day the pilots of large transports land their planes accurately and within a few feet of the centerline of runways.

The Jet Plane Development

The jet planes of the day in America are not being developed in the same way that they are in Europe in one particularly prominent characteristic: this is the location of the jet engine. The Douglas DC-8 and Convair 880 have followed the lead of the Boeing 707, which naturally followed the lead of the B-47 and the B-52. Unfortunately, these leads seem to derive from the old position of piston engines in nacelles mounted outboard on the wings. Here we have a very typical illustration of a lesson not learned from the history of our art. For a jet engine this location is not good. Jet engines are very light, so the structural saving in spreading the weight over the wing is very much less than it is in the case of the piston engine. Also there is no propeller clearance requirement. But the engines are now located so low that they will ingest any loose material on the runway with great risk to the delicate turbine engine interiors.

The outboard engine is so low that a tire or wheel failure on one side would come near to breaking it up on the ground, followed possibly by fire from the gas tanks above it. The position of the engine under the wings makes the wing a perfect sounding board to disturb the neighbors below, and the inboard engine is so located that its noise cone hits the rear of the fuselage, making it almost untenable. The builders and operators are aware of these features and are doing all they can still to give us excellent safety.

In Europe, most of the newer commercial designers completely separate themselves from all piston-engine concepts by placing the jet engines where they belong: above the wing and to the rear, mounted to the fuselage, leaving the wing with perfect aerodynamic cleanness. Maintenance also is improved by this location.

The biggest revolution in the coming design of useful aircraft will be in the advent of the direct-

lift airplane, sometimes awkwardly called VTOL (vertical take-off and landing). After some 10 years of intensive research, resulting in several bookshelves full of excellent National Advisory Committee for Aeronautics and other laboratory reports on how to do this trick (of making a fast airplane land vertically), it is only this year that we are beginning to show the needed interest and the beginnings of progress in this development. Boundary layer control is only one facet of this. Tilting wings, tilting jet engines, and other ways are being developed.

The helicopter does not quite meet the bill, simply because its high speed is limited due to the rotor configuration. Even if helicopters get up to a high cruising speed of 200 miles per hour, they will still, at that time, have to face fixed-wing aircraft of over twice that speed. Slow aircraft, no matter for what purposes, have never survived.

Fuel, Weight and Time

There are many objections to lift-planes (VTOL) now being voiced. One is that the fuel consumption for vertical flying is utterly prohibitive. In the light of history, this belongs with the objections that were raised to monoplanes, to metal construction, and to slots and flaps.

A simple analysis will show quite quickly that while direct-lift by jet will need three or four times the thrust of the existing jet engine configurations — and will, therefore, use three times the fuel — the actual fuel used by the jet transport in taxiing out to the end of a long runway, waiting for clearance, then the long take-off run, then climbing to 1,000 feet is, if anything, more than the direct-lift plane would use for a few short moments rising immediately from its pad at the loading ramp with all engines full-out, to 1,000 feet, and then shutting off its extra lift engines.

Another argument, in the same class as these old shibboleths, is that extra weight is involved in heavy extra jet engines for vertical thrust. Actually, vertical lift capability means a much lighter landing gear, so the weight of the extra jet engines that are needed for the vertical operation could represent no more of a burden to the aircraft than the landing gear. Originally, this represented 6 to 10 per cent of the empty weight of the aircraft, used only for a short while on landing and take-off, whereas the extra jet engines could be used, in a pinch, if the other power plants failed, or for quicker climb.

And with the ability to rise vertically and fly fast, the lift plane, in smaller sizes (if not too noisy) would at last penetrate the open and fertile field of private vehicle aircraft, which has hardly been touched.

Immediately, when we contemplate many different designs of aircraft for vertical lift and high speed, we find that the gas generator (the jet engine power plant) will most likely become a very intimate part of the wing. In fact, the final requirement from the gas generator is for a forced lift flow around the wing, including boundary layer control. For the slow-speed regime, a large volume of air moving more slowly (400

(Concluded on page 434)



Annual lectures at M.I.T. on the history of aviation were provided for by a bequest of the late Lester D. Gardner, '98, who was also instrumental in establishing the Hunsaker Professorship in Aeronautical Engineering. Major Gardner was president for 10 years of the Gardner Publishing Company and for four years was chief executive officer of the Institute of the Aeronautical Sciences.

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To show you how Revere's Technical Advisory Service can render you valuable aid we cite the following example: Years ago the country's oldest manufacturer of milk coolers came to Revere with the idea of building copper-lined coolers to supplant their galvanized ones which had produced corrosion and other problems.

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cooler for greater efficiency and economy. Revere Research also showed this manufacturer how to overcome their soldering and welding problems.

Because of the continuing efforts of Revere's Technical Advisory Service, in connection with Revere's Research Laboratories, this manufacturer is today in the position of being able to offer a most efficient cooler at the least possible cost. Claims of this manufacturer for this cooler are that it will cool milk, uni-

formly from top to bottom without mechanical refrigeration and electricity. That the cream on top will never warm up. That the cooler produces continuous 24-hour cream line cooling which removes the heat from the cream line on the top as well as from the milk on the bottom. That temperature of the milk always goes down, never up, between milkings . . . not one B.T.U. of heat that passes through the side walls or the bottom ever reaches the milk. This is still another example of how Revere's Technical Advisory

Service was able to fit the metal to the job in order to produce a superior product at the least possible cost.

Practically every industry you can name is able to cite similar instances. So we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower costs by specifying exactly the *right* materials.



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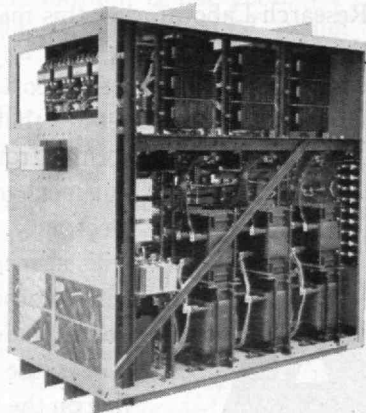
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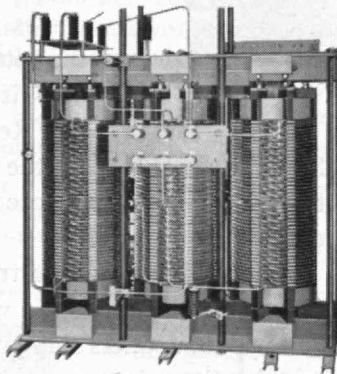
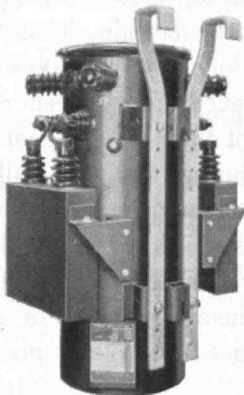
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TALK OF OUR TIMES

Political Institutions Can Be Improved

When the New York Young Republican Club presented its 1959 War Memorial Award to Thomas C. Desmond, '09, this spring, he called for more participation in politics by honest, well-informed citizens. Mr. Desmond served for 28 years in the New York State Senate. He was president of the M.I.T. Alumni Association in 1930-1931 and is a life member of the M.I.T. Corporation. In his talk to the Young Republicans, Mr. Desmond said in part:

■ In previous generations the United States had to fear but relatively little the results of bad politics and bad statesmanship. But in this hydrogen bomb age those evil twins may lead us to catastrophe.

Let us contrast conditions as they are now with what they were say only 50 years ago. During this short span of time we have seen the development of automobiles, aviation, radio, labor-saving devices, and other technological improvements which have made our country now technologically so superior to what it was a half century ago.

But who can honestly say that the quality of our government has improved comparably in the last 50 years? Meanwhile government has become increasingly complex and important affecting much more the daily lives and happiness of all of us than it did 50 years ago.

One of my responsibilities for many years has been to serve as a life member of the Corporation (governing board) of the Massachusetts Institute of Technology. Naturally, therefore, I am reasonably familiar with continuing technological improvements. My hope is that more capable minds, of the kind which during recent years have produced so many technological improvements, during the years to come will be devoted to the so greatly needed political and governmental improvements. Machines are important but men are more important. Technological improvements are important but improvements in the art of human relations are even more important. A world that knows television should not still know bayonets.

Men and women are likely to attain happiness if they are motivated in large part by deep, underlying desires to spend much of their lives in useful service. What more surely useful service can a man render to his fellow men than by assisting in maintaining and strengthening our precious democratic institutions?

Our economy and culture are changing rapidly from year to year due to frequent technological improvement. Our political and social institutions need also to be improved constantly in correlation with technological improvements. Unfortunately, political and social improvements seem to be lagging behind.

Our cherished democratic institutions will benefit when more capable men and women are willing to give part of their time to serving as members of school boards, party committees, city councils, delegates to political conventions, or members of the national or

(Concluded on page 420)

COMMAND DESTRICT

The flight testing of second generation missiles—more versatile and powerful than their predecessors—requires a device for sure termination of any missile flight that might endanger the test range or surrounding area.

Ramo-Wooldridge engineers, under a United States Army Signal Corps contract, have successfully developed and delivered the first sub-miniature, completely transistorized radio "command destruct" receivers.

Specifically designed for missile flight safety operations, the receiver (AN/DRW-11) can actuate safety mechanisms or destruct devices. It has three command channels, each of which actuates a control relay.

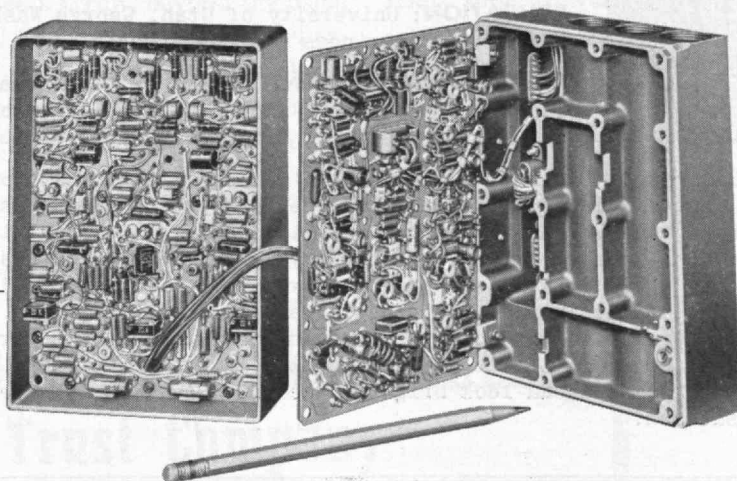
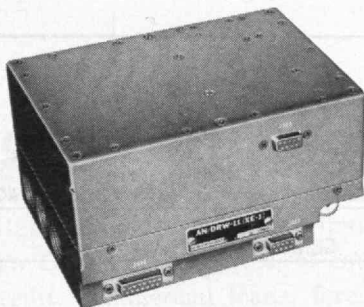
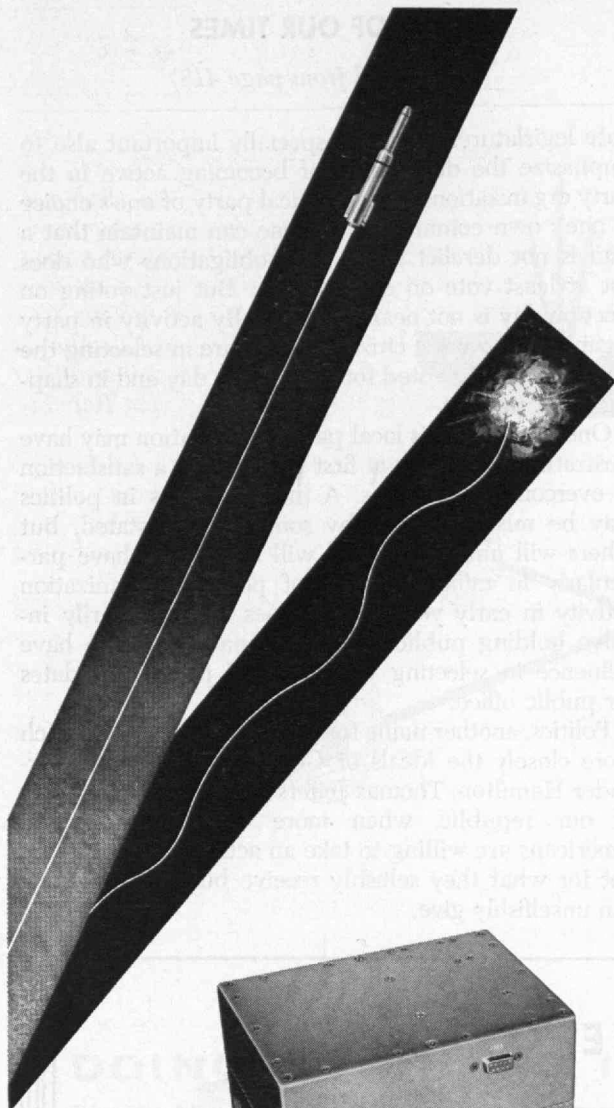
The "command destruct" receiver accepts frequency modulated signals in the UHF radio command control band. It is designed to operate with closer radio frequency and command frequency channel spacing than has been used to date, thus making possible more efficient use of the available radio spectrum.

Compact and rugged, the radio receiver's modular construction permits rapid and complete accessibility to all components. One module houses the basic receiver. The second module contains the three command channels and relays. This integrated package occupies 115 cubic inches, and weighs 4 pounds. The receiver requires no pressurization and operates reliably under the adverse environmental conditions encountered in missile flight testing.

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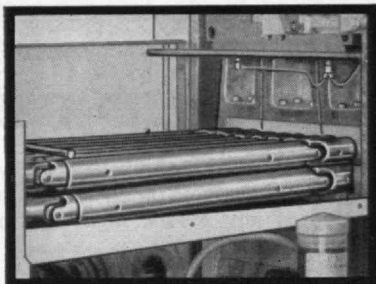
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TALK OF OUR TIMES

(Concluded from page 418)

state legislature. It seems especially important also to emphasize the desirability of becoming active in the party organization of the political party of one's choice in one's own community. No one can maintain that a man is not derelict in his civil obligations who does not at least vote on election day. But just voting on election day is not nearly enough. By activity in party organization work a citizen has a share in selecting the candidates to be voted for on election day and in shaping party politics.

One who joins his local party organization may have frustrating difficulties at first but there is a satisfaction in overcoming obstacles. A man's motives in politics may be misunderstood by some and misstated, but others will understand and will approve. I have particularly in mind the type of political organization activity in early years which does not necessarily involve holding public office but enables one to have influence in selecting well-qualified party candidates for public office.

Politics, another name for government, will approach more closely the ideals of George Washington, Alexander Hamilton, Thomas Jefferson, and other founders of our republic, when more constructive-minded Americans are willing to take an active part in politics not for what they selfishly receive but for what they can unselfishly give.

SPECIAL REPORT



Mr. RULON E. RASMUSSEN NEW YORK LIFE AGENT

at PHOENIX, ARIZONA, GENERAL OFFICE

BORN: April 7, 1923

EDUCATION: University of Utah, George Washington University, Business and Law Schools.

PREVIOUS EMPLOYMENT: Member of U.S. Senator Elbert Thomas' staff. Staff member Senate Education & Labor, and Military Affairs Committees, 1943-1947.

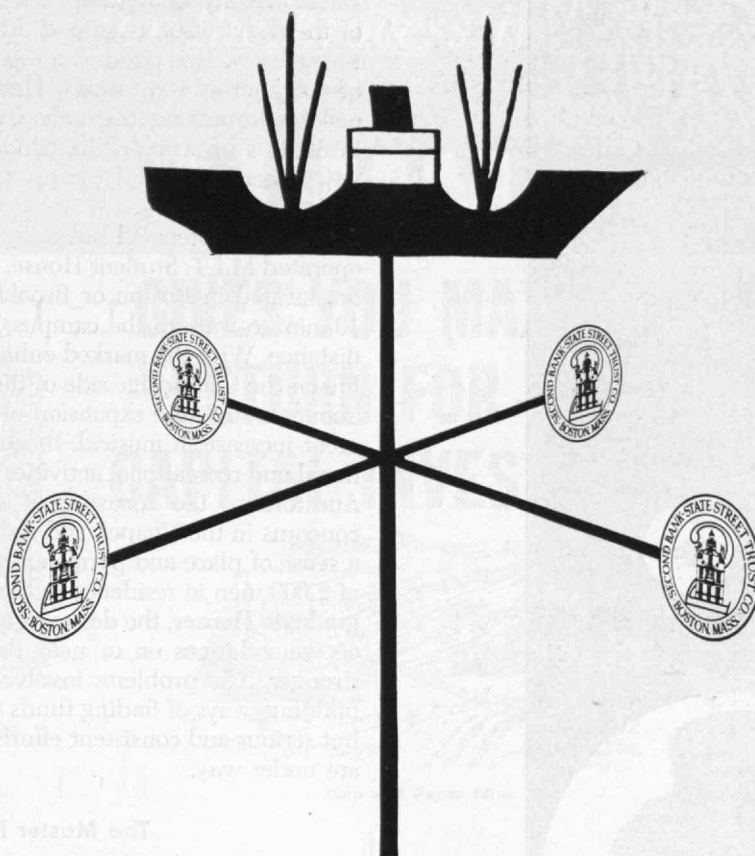
REMARKS: One key factor in Rulon Rasmussen's successful transition from legislative fact-finding to life insurance selling was his fine business and law school background. This background and his congenial personality have helped Rulon top the million-dollar sales mark every year since 1949, the year after he became a New York Life representative. Today he is a Qualifying and Life member of the insurance profession's Million Dollar Round Table and has earned membership in the Company's Presidents Council—an honorary organization of New York Life's leading agents. If past experience is any indication, the years ahead look bright indeed for New York Life representative Rulon E. Rasmussen.

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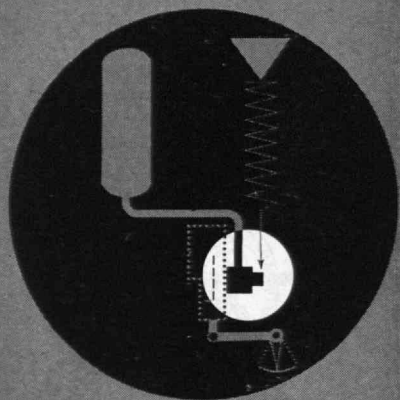
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PROPER ENVIRONMENT FOR STUDENTS

(Continued from page 412)

the fraternity chapters, which now are home to some 1,100 students. It is fair to say that the Institute's Interfraternity Conference, the central governing body of the fraternities, is among the leaders of its kind in the country. It is cited as a model by not a few deans of neighboring institutions. Through it the 28 chapters collaborate among themselves and with the Institute in matters of scholarship, conduct, social affairs, athletics, recreation, and the operation of joint purchasing.

Of the chapters, all but four, together with the ably operated M.I.T. Student House, a co-operative venture, are located in Boston or Brookline, some as near as a 10-minute walk to the campus, others at considerable distance. With the marked enhancement of community life on the Cambridge side of the river which has come about through the expansion of the athletic fields, the great increase in musical, theatrical, and other educational and recreational activities fostered by the Kresge Auditorium, the focusing of spiritual and religious concerns in the Chapel, and indeed the building up of a sense of place and permanence through the presence of 2,000 men in residence in the Graduate and Undergraduate Houses, the desire of many fraternities to find accommodations on or near the campus has become stronger. The problems involve sites, the high cost of building, ways of finding funds for building, and taxes, but serious and consistent efforts to solve the problems are under way.

The Master Plan

To return now to the Undergraduate Houses: Partly to provide the greater contact between students and Faculty which has been stressed by students as a great desideratum, partly to foster a feeling of continuity in the Houses themselves, partly to aid in the growth of student responsibility and self-government in the Houses, and primarily to facilitate in the undergraduate world the opportunities for social and cultural growth which Professor Ashdown as Master has emphasized in the Graduate House, the Institute in 1951 brought married members of the Faculty into residence in the Houses. Over the years, 10 Faculty families have spent a year or as many as five years thus. With the student house committees they have

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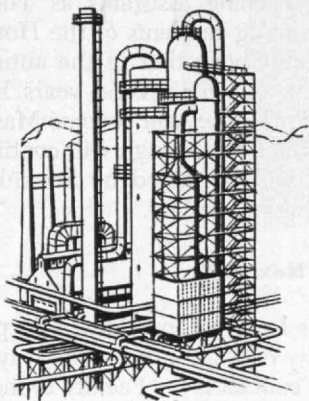
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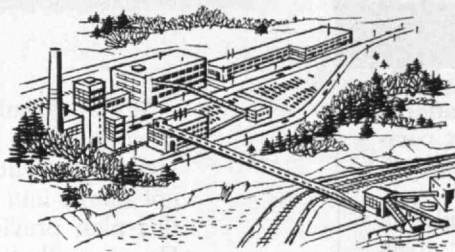
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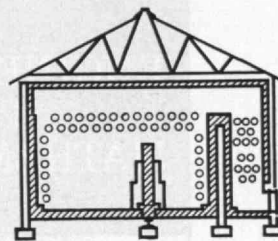
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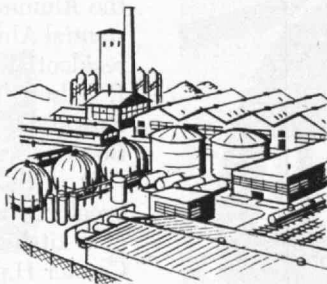
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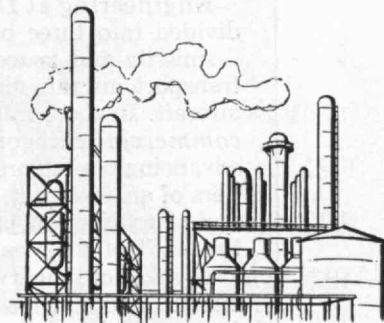
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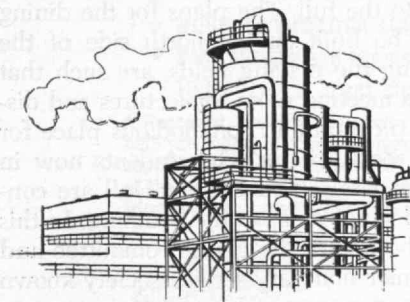
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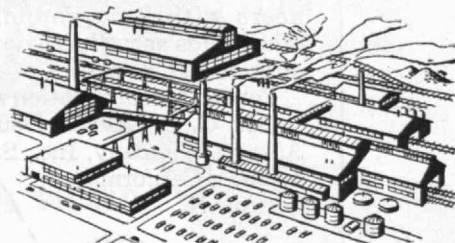
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worked for the general betterment of undergraduate life, in ways ranging from teas and dances to lectures and seminars. With individual students they have served as guides, philosophers, and friends when needed. Friendships have thus been built up which long outlast graduation and departure.

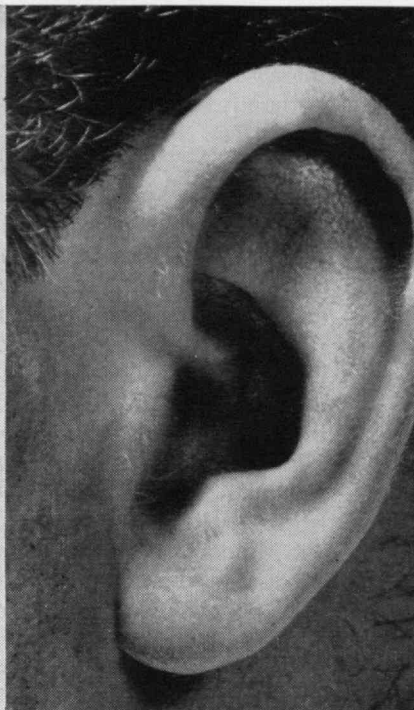
The logical extension of this plan was the initiation last autumn in Burton House and Conner Hall of the "Master plan," under which Professor Howard R. Bartlett, Head of the Department of Humanities, became Master of the House, and took up residence there with Mrs. Bartlett. Two junior professors as Senior Tutors and six teaching assistants as Tutors joined the program, becoming residents of the House. So successful has the result been that in the autumn of 1959, John B. Goodenough, for several years Faculty Resident of the Senior House, will become Master of the House. He and Mrs. Goodenough will continue in residence there, and will be joined by a resident Senior Tutor and four resident Tutors.

The Next Step

With a Faculty that is largely nonresident — in part because of the geography of Cambridge — the way to increase student-Faculty contact is for Faculty to move not simply into Cambridge, but actually on campus as this plan provides. It will be extended to the other Houses with time. Facilitation of it has been made possible in no slight measure through the support of the Alumni, specifically through the allocation of substantial Alumni Fund money to the development of the residential system as was announced recently by John J. Wilson, '29, President of the Alumni Association, and Edwin D. Ryer, '20, chairman of the Alumni Fund Board.

It is this support which makes possible, too, the breaking of ground this summer for the construction of a kitchen and dining room for Burton House and Conner Hall which will make this undergraduate center truly self-contained — a place where undergraduate life may be lived to the full. The plans for the dining room, which will be built on the north side of the building overlooking the playing fields, are such that it can be used as a meeting room for lectures and discussions, and as a pleasant and commodious place for dances and other social affairs. The students now in residence in Burton House and Conner Hall are contributing ideas and suggestions to the planning. In this they are working both with the House committee and with the House senior honorary service society known as Burcon.

No more significant note could be found for the conclusion of this survey than the creation of the Burcon society by a group of seniors five years ago, with its goal that of service and support for the good life for all members of the House, and the emulation of Burcon by the establishment this year of a comparable group in Baker House, by the name of the Everett Moore Baker Society. In this sort of thing, the House system at the Institute comes of age.



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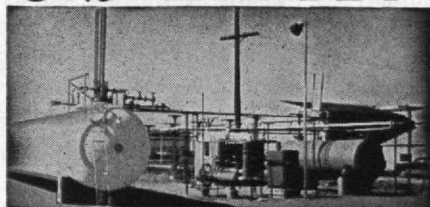
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TREND OF AFFAIRS

(Continued from page 403)

Individuals Noteworthy

■ Named in the news recently were the 27 Alumni and members of the Faculty whose elections, promotions, and appointments are recorded below:

Maurice R. Scharff, '09, as a Director, Duquesne Light Company, Pittsburgh . . . *Neal T. Tourtellotte*, '17, as Regional Director, District XIII, U. S. Small Business Administration . . . *Theodore W. Bossert*, '20, as a Vice-president, Aluminum Company of America;

Harold R. Boyer, '22, as Director of Military Products, General Motors Corporation . . . *Allen S. King*, '22, as President, Edison Electric Institute . . . *Carl W. Shattuck*, '22, as President, McKiernan-Terry Corporation, Harrison, N. J.;

Hugh S. Ferguson, '23, as President, National Research Corporation . . . *Walter F. Munford*, '23, as President and Chairman of the Executive Committee, United States Steel Corporation . . . *Carl F. Muckenhoupt*, '24, as Director of Research, Northeastern University;

Carleton Shugg, '24, as President, Electric Boat Division, General Dynamics Corporation . . . *Charles S. Draper*, '26, as Chairman, National Inventors Council, U.S. Department of Commerce . . . *Edward M. Tittmann*, '29, as Executive Vice-president, American Smelting and Refining Company;

Claude F. Machen, '31, as a Vice-president, Boston Gas Company . . . *Emile M. Bustani*, '33, as the delegate of Lebanon to the Arab Petroleum Congress . . . *Richard S. Morse*, '33, as Director of Research and Development, Department of the Army;

Richard Robinson, '33, as President, Massachusetts Broken Stone Company . . . *Professor John G. Trump*, '33, and *Robert J. Van de Graaff*, Associate Professor of Physics, as Directors, Goodrich—High Voltage Astronautics, Inc. . . . *Richard H. Valentine*, '33, as Director of Research and Development, New Departure Division, General Motors Corporation;

Paul W. Vogel, '38, as Comptroller, Underwood Corporation . . . *George C. Halstead*, '40, as a Vice-president, Alcoa Steamship Company . . . *R. Dixon*



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Speas, '40, as a Vice-president, the Wings Club of New York;

Herbert C. Wohlers, '40, as Director of Research, Solvay Process Division, Allied Chemical Corporation . . . *Will B. Rodemann*, '44, as President, Swiftwater Industries, Inc., Chagrin Falls, Ohio . . . *Harold Brown*, '47, as Vice-president, Walworth Company;

Mrs. Cecily C. Selby, '50, as Headmistress, the Lenox School, New York City . . . *Martin H. Miller*, '51, as Vice-president, Adam Hat Manufacturers, Inc., a division of Miller Brothers Hat Company, Inc.

■ Special honors and awards announced recently include:

To *Luis de Florez*, '11, the Distinguished Flying Cross, from the Secretary of the Navy . . . to *Jerome C. Hunsaker*, '12, Honorary Fellowship, by the Institute of the Aeronautical Sciences . . . to *Philip L. Alger*, '15, the Lamme Medal for 1958, by the American Institute of Electrical Engineers;

To *Crawford H. Greenewalt*, '22, Gold Medal, by the American Institute of Chemists . . . to *William H. Mueser*, '22, the Metropolitan Civil Engineer of the Year Award for 1958, by the Metropolitan Section, American Society of Civil Engineers . . . to *Charles S. Draper*, '26, the Godfrey L. Cabot Award, by the Aero Club of New England;

To *Jacob J. Jaeger*, '34, its 1959 Engineering Citation, by the American Society of Tool Engineers . . . to *Henry R. Wilsey*, '36, the Silver Beaver, by the Eagle Rock (N. J.) Council, Boy Scouts of America;

To *Commander Michael U. Moore*, '49, U. S. Navy, the Air Force Commendation Medal, by the United States Air Force . . . to *Murray Gell-Mann*, '51, the \$2,500 Dannie Heineman Prize for mathematical physics, by the American Physical Society and the American Institute of Physics.

How to See M.I.T.

■ Perhaps the best way to get a quick, comprehensive look at M.I.T. these days is to take one of the general tours offered by the Guide Service. They start from the Admissions Office daily at 10:00 A.M. and 2:00 P.M., and cover such points of interest as an electrical engineering laboratory, a chemistry laboratory, the 704 computer, the Hayden Memorial Library, Kresge Auditorium, and the Chapel.

About 4,000 visitors a year patronize this free guide service.

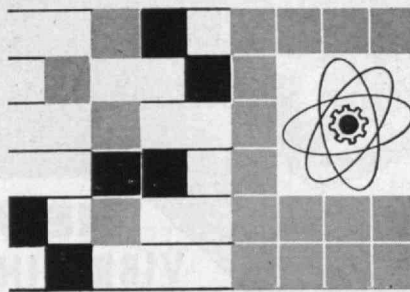
(Continued on page 428)



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The Sloan Men Return

■ A convocation for Sloan Fellows, and another for Senior Executives, who have studied at M.I.T., brought about 200 of them back to Cambridge this spring to hear more about management in an era of dynamic technology. "New developments in business and technology occur so rapidly," said E. P. Brooks, '17, Dean of the School of Industrial Management, "that these men find it of immense help to return to M.I.T."

There have been 333 participants in the Sloan Fellowship Program which began in 1931, and 131 in the program for Senior Executives which began in 1956.

"The management of American enterprise," Alfred P. Sloan, Jr., '95, said at the Sloan Fellows' reunion dinner, "is recognizing, in an accelerating degree and in its own self-interest, the demand for a truly scientific approach to the problems of industrial management."

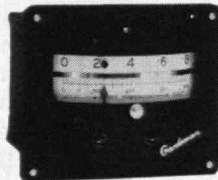
Next fall, a Sloan Teaching Internship program, to prepare men for teaching and research in industrial management, will begin. The first interns will be: Rhea H. West, Jr., Professor of Management at the University of Arkansas; Louis F. Bucklin, a Northwestern University graduate student; and Charles L. Campbell, 3d, Associate Professor of Economics at Hillsdale College in Hillsdale, Mich.

(Concluded on page 430)

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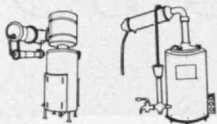
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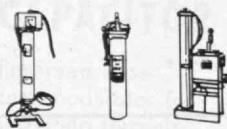
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TREND OF AFFAIRS

(Concluded from page 428)

Tuition Will Go Up

■ The tuition fee at M.I.T. will be increased from \$1,300 per academic year to \$1,500 when the 1960 Summer Session opens. The increase has been necessitated by rising costs and was decided on reluctantly. To help alleviate the burden on parents and students, an Installment Plan has been set up.

This plan will permit the tuition fee to be met by an initial payment of \$1,000, either on a term or monthly budget basis during the year, and long-term installment payments on the remainder. The annual interest rate on the unpaid installment balance will be 5 per cent, and no collateral will be required. M.I.T. will use the facilities of the First National Bank of Boston to provide this financial help but will underwrite all installments and bear all handling and collection costs to keep the interest rate as low as possible.

The Institute will continue to help its neediest students from other resources, as in the past, and hopes to expand its traditional sources of financial aid in order to moderate the impact of the tuition increase as much as possible for those who have limited financial means.

Appointments to the Faculty

■ The Faculty of M.I.T. was notified this year of the appointments of four new professors:

Donald G. Marquis, internationally known psychologist, will join the School of Industrial Management. A former chairman of the Department of Psychology at Yale and at the University of Michigan, he comes to the Institute from the staff of the Social Science Research Council in New York. He served under Vannevar Bush, '16 (now honorary chairman of the M.I.T. Corporation), in the Office of Scientific Research and Development during World War II, has been a consultant to many organizations, and is a past president of the American Psychological Association.

Salvador E. Luria, an outstanding authority on bacterial viruses, microbial genetics, and biological effects of radiation, will remain in the Department of Biology where he has been a visiting professor. Dr. Luria has worked in several of the leading research laboratories in this country and Europe, and has taught at the University of Indiana and the University of Illinois.

Richard D. Schafer, Professor and Head of the Department of Mathematics at the University of Connecticut, will join the Department of Mathematics. Educated at the University of Buffalo and the University of Chicago, he has been a member of the Institute for Advanced Study and the faculties of the University of Michigan and the University of Pennsylvania.

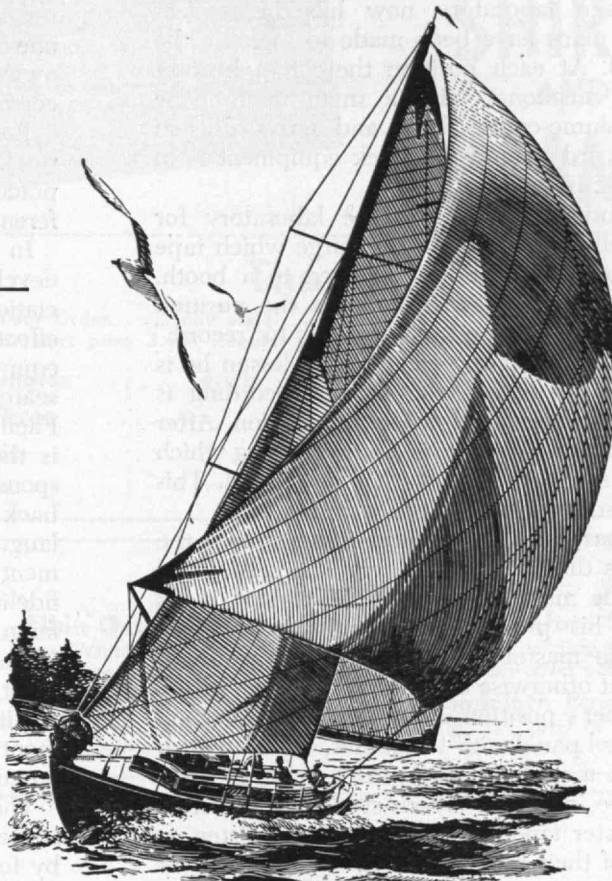
Gerald B. Whitham, Associate Professor in the Institute of Mathematical Sciences at New York University, also will join the Department of Mathematics. A native of England, he was educated at Manchester University, where he later served as a lecturer in mathematics.

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NEW LANGUAGE LABORATORY

(Concluded from page 404)

language laboratory system, called "The Lingua-trainer," has been installed. The equipment was manufactured by a local firm, and this installation, which was made possible by a gift from a generous Alumnus, is the first of its kind. It will serve as a pilot model in tests and further research.

The language laboratory now has 14 student positions and plans have been made to increase the number to 30. At each position there is a headset consisting of earphones with a small microphone attached, a volume-control knob and a record-listen switch. All recording and playback equipment is in a metal cabinet in another room.

When a student comes into the laboratory for practice, he tells the instructor in charge which tape he would like to hear and is assigned to a booth. There he puts on the headset, adjusts the position of the microphone, and pushes his switch to "record." He then hears a master recording of the lesson he is to practice. As he listens, the master recording is copied on the individual tape for his position. After each phrase or sentence there is a pause during which the student can repeat what he has just heard. This imitation is also recorded on the student's tape.

When he has heard the entire master tape, the student pushes the switch to "listen." Then he hears the copy of the master tape with his responses. As he compares his pronunciation with that of the speaker on the master tape, he becomes aware of differences that otherwise he would not have noticed.

At the teacher's position at the front of the room, there is a control panel with 14 squares, each of which corresponds to a student booth. Pilot lights in these squares tell the instructor which students are listening to the master tape and which ones are listening to playbacks of their own recording. If the instructor wishes to monitor a student's performance, he may do so. He can also speak to the student individually and make necessary corrections.

There is also an intercom system which enables the instructor to speak to the entire class.

The tapes used are endless loops, so no rewinding is needed. This is important, for most damage to tapes occurs during rewinding. The tapes are stored in plastic cartridges, so no threading is necessary. An automatic device can be used to stop each tape at the completion of the loop.

The recording and playback equipment consists of 14 dual-track tape recorders — one for each student position. Four of these are used as playback machines for master channels. Any student can be tuned in on one of these master channels, make a recording of his own voice on the second track of the tape in the slot corresponding to his booth, then listen to himself.

Each of the 14 students using the laboratory may work on a different problem. Hence, students may practice at their own speed, and students from different classes can use the laboratory simultaneously.

In addition to providing the means for students to develop greater fluency and more accurate pronunciation, the laboratory is being used to study the effect of frequency response of language-laboratory equipment on language learning. The aim of this research, supported by funds granted by Educational Facilities Laboratories (a Ford Foundation agency), is the determination of the optimum frequency response for similar equipment. If high fidelity in playback and recording equipment is important in language learning, money spent on low-fidelity equipment will be wasted. On the other hand, if high fidelity is not important, the cost of equipment for language laboratories may be substantially reduced. There is also the possibility that high-fidelity equipment is necessary for recordings in one language but not in another, so that the specifications of the equipment for a laboratory may be determined by the languages to be taught.

The laboratory is being used now by American students learning German, French, and Russian, and by foreign students who are trying to improve their spoken English. As use of the laboratory increases, it is planned to build a library of recorded exercises, not only for the languages taught at M.I.T. but also for other languages, so that students who wish to learn spoken Arabic, or even Chinese, may do so.

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HISTORY OF FLIGHT

(Concluded from page 416)

miles per hour, or so) is used and then replaced, when once up in the air, by a suitable change in ducting to the high speed "thrust" flow that we use today over a small cross section for fast aircraft. The wing may well become the crankcase of the engine!

We must, also, think of the seaplane. Propeller clearance from the water limited early seaplanes because the configurations required an awkwardly high engine location, or a deep hull, or bulky pontoons. And all this weighed more than a simple land plane, and had more parasitic drag which meant more of that slow speed deterrent. The jet engine, however, is likely to change this picture very greatly in the next decade.

To begin with, the propeller clearance parameter is done away with. Our aerodynamic forms can now rival the land plane, and in a seaplane, alighting on its hull on the water, weight and complications are saved by elimination of heavy landing gear. But the seaplane would still have to contend with rough water, were it not for the imminent advent of VTOL. This will eliminate the "rough water blues"!

Right under our noses, today, are wrong trends, un-realized, and right trends, unappreciated, because we do not think things through enough.

A breakthrough on lighter radiation shielding is now imminent and this means nuclear power plants. So let us start our thinking on this new type, at once, in terms of wing flow and low noise level.

We are becoming aware that speed is the *raison d'être* of flying, particularly also in air transportation of passengers. Have we learned that the greatest comfort of all to a passenger is the notice that he has arrived? A super-comfortable seat does not balance a tediously slow aircraft.

Our air age has only just started, for in our travels and movements of ourselves and our goods, we are about to obsolete the wheel, just as the wheel-and-axle invention obsoleted the skid and roller some 10,000 years ago.

The Regatta Will Be June 20

The annual Intercollegiate Rowing Association Regatta, formerly known as the Poughkeepsie Regatta, will be June 20 on Onondaga Lake, near Syracuse, N.Y. M.I.T. will be one of 14 schools competing, and tickets may be obtained from the M.I.T. Athletic Department. There will be three races, starting at 3:00 P.M.

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Lauren B. Hitchcock '20 Technical Advisor, John H. Schaefer '26
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Port and Terminal Works
Industrial Plants Incinerators
Designs Investigations
Supervision of Construction
Boston, Massachusetts

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Consulting Engineers

HERBERT S. CLEVERDON '10 WALDO F. PIKE '15
JOHN A. DOW '23 HAROLD E. PROCTOR '17
Structural Designs Foundations
Heating, Ventilating, Electric and Plumbing De-
signs, Industrial Buildings, Reports, Investigations
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Strain Gage Amplifiers • Strain Gage Switches
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CONSULTING ENGINEERS

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Airports Surveys
Water Supply Design
Sewage Treatment Construction Supervision
Bridges Soil Testing

Branch Offices

Rochester, N. Y. Saigon, Vietnam
Robert E. Smith '41, Vice President

Class Reunions in 1959

- 1894 June 14. M.I.T. Faculty Club, Sloan Building, 50 Memorial Drive, Cambridge. Dinner — 6:00 P.M. Samuel C. Prescott, Secretary, Room 16-317, M.I.T., Cambridge 39.
- 1899 June 15-16. University Club, 40 Trinity Place, Boston. William A. Kinsman, President, 348 High Street, Newburyport.
- 1900 June 16-17. Endicott House, Dedham. Elbert G. Allen, Secretary, 11 Richfield Road, West Newton 65.
- 1901 June 12-14. Endicott House, Dedham. Robert M. Derby, reunion chairman, Brookside Farm, Williamstown.
- 1904 June 14. Brae Burn Country Club, Newton. Reunion cochairmen: Carle R. Hayward, Room 35-304, M.I.T., Cambridge 39; Eugene H. Russell, Jr., 82 Devonshire Street, Boston 9.
- 1907 June 12-14. Oyster Harbors Club, Osterville, Mass. Philip B. Walker, Secretary, 18 Summit Street, Whitinsville.
- 1908 June 12-14. Melrose Inn, Harwich Port, Mass. H. Leston Carter, Secretary, 14 Roslyn Road, Waban 68.
- 1909 June 12-14. *50th reunion*: Snow Inn, Harwich Port, Mass. Francis M. Loud, reunion chairman, 351 Commercial Street, Weymouth 88.
- 1914 June 12-14. The Publick House and Treadway House, Sturbridge, Mass. Charles P. Fiske, reunion chairman, Cold Spring Farm, Bath, Maine.
- 1916 June 12-14. Chatham Bars Inn, Chatham, Mass. Harold F. Dodge, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.
- 1919 June 12-14. Wentworth-by-the-Sea, Portsmouth, N.H. Wilfred O. Langille, reunion chairman, Diehl Manufacturing Company, FINDERNE, Somerville, N.J.
- 1924 June 12-14. Oyster Harbors Club, Osterville, Mass. Paul J. Cardinal, reunion chairman, 195 Midland Avenue, Montclair, N.J.
- 1929 June 12-14. Bald Peak Colony Club, Melvin Village, N.H. Francis M. Mead, reunion chairman, 15 Waterhouse Road, Belmont.
- 1934 June 12-15. *25th reunion*. Baker House, M.I.T., Cambridge. Malcolm S. Stevens, reunion chairman, Room 1-139, M.I.T.
- 1939 June 12-14. Snow Inn, Harwich Port, Mass. William F. Wingard, reunion chairman, 26 Blithedale Street, Newtonville 60.
- 1944 June 12-14. Chatham Bars Inn, Chatham, Mass. Reunion cochairmen: (2-44) Burton A. Bromfield, 72 Woodchester Drive, Weston; (10-44) Kenneth G. Scheid, 24 Lee Street, Marblehead.
- 1949 June 12-14. Hotel Curtis, Lenox, Mass. Reunion cochairmen: Russell N. Cox, 103 Loring Road, Weston 93; Kemon P. Taschioglou, Polaroid Corporation, 730 Main Street, Cambridge 39.
- 1954 June 13-14. Cliff Hotel, North Scituate, Mass. Robert E. Anslow, reunion chairman, 935 Massachusetts Avenue, Lexington 73.



ALUMNI AND OFFICERS IN THE NEWS

New Niches . . .

In addition to the 27 recorded on page 426, other Alumni have been promoted, elected, or appointed as follows:

GEORGE W. THOMAS'18 as superintendent of Manufacturing Services, B. F. Goodrich Footwear and Flooring Company, Watertown, Mass. . . . SARGENT D. HEATH'24 as assistant treasurer, Washburn Company . . . WILDER E. PERKINS'25 as manufacturing manager in charge of several departments Manhattan plant, Raybestos-Manhattan, Inc., Passaic, N.J.;

E. H. BRAMHALL'27 as chief of weapon systems analysis, Solar Aircraft Company, San Diego, Calif. . . . THOMAS A. FEARNSIDE'31 as assistant engineering manager, Stone and Webster Engineering Corporation . . . JAMES T. SNOW'32 as plant engineer, manufacturing facility in Hammond, Ind., Lever Brothers Company;

PHILIP S. VINCENT'36 as manager of equipment services, Remington Rand Univac Division, Sperry Rand Corporation . . . CHARLES L. RICH'37 as a director, the Norwood Co-operative Bank, Norwood, Mass. . . . H. EDGAR WAYNE BURNSIDE'38 as an engineering associate, Esso Research and Engineering Company;

ROBERT B. GORDON'39 as deputy director, Fuels and Materials, Atomic International Division, North American Aviation, Inc., Canoga Park, Calif. . . . THOMAS M. LEPS'39 as manager of organization and procedures, Southern California Edison Company . . . FRANK G. DENISON, Jr., '40 as manager, Vehicle Technology, Space Technology Division, Aeronutronic Systems, Inc., Newport Beach, Calif.;

OLAF A. BREDESON'41 as technical superintendent, Kingston, N.C., plant, E. I. du Pont de Nemours and Company . . . LEWIS D. FYKSE'41 as director of market-

ing, Associated Spring Corporation, Bristol, Conn. . . . IRVING KOSS'41 and WILLIAM S. WHEELER, Jr., '54, respectively, as manager, Microwave Department and as vice-president in charge of Military Electronics Division, Motorola, Inc.;

CHARLES K. RAYNSFORD'42 as chief engineer and JOHN F. REEVES'42 as head of the Systems Analysis Department, West Orange, N.J., laboratory, Vitro Corporation . . . MONROE S. SADLER'42 as a laboratory director and RICHARD E. MERIFIELD'50, WILLIAM D. PHILLIPS'51, and HOWARD E. SIMMONS, Jr., '51 as research supervisors, Central Research Department, E. I. du Pont de Nemours and Company, Wilmington, Del.;

ROBERT P. DODDS'44 as district representative at the San Diego, Calif., office, Vickers, Inc. . . . RICHARD J. STEELE'46 as assistant director, western division offices in Los Angeles, George Fry and Associates . . . MAURICE A. LYNCH, Jr., '49 as product manager for textile products, Silicones Division, Union Carbide Corp.;

EDWARD P. CLARKE'51 as manager, systems simulation laboratory, Mohansic Research Laboratory, International Business Machines Corporation, Yorktown, N.Y. . . . LIEUTENANT COMMANDER JAMES C. MATHESON'52 as chief, West Milton field office, Schenectady Naval Reactors Operations Office, U. S. Atomic Energy Commission . . . BENNETT D. BUCKLES

'53 as assistant to the president, Solvay Process Division, Allied Chemical Corp.;

THOMAS R. WILLIAMS'54 as a senior associate management consultant, Bruce Payne and Associates, Inc., Westport, Conn. . . . PETER WALLACK'55 as chief engineer, New Departure Division of General Motors Corporation, Bristol, Conn. . . . HARRY B. DUANE, 3d, '57 as chief accountant, Refractories Division, Norton Company, Worcester, Mass.

Press Products . . .

Bookshelf additions authored by Alumni include the following:

The American Institute of Architects' First Hundred Years by HENRY H. SAYLOR'02 (Washington, D.C.: American Institute of Architects, 1958, 184 pages);

1001 Questions Answered About the New Science by DAVID O. WOODBURY'21 (Toronto, Canada: Dodd, Mead, and Company, 1959, 358 pages, \$6.00);

The New Mayflower: Her Design and Construction by the designer of *Mayflower II*, WILLIAM A. BAKER'34 (Barre, Mass.: Barre Gazette, 1958, 162 pages, \$8.00);

Candle Count . . .

Among the Alumni celebrating birthdays in June are ARTHUR K. HUNT'85 who becomes 95 on the 19th; three who reach 90; two who turn 85; and fifteen who complete their 80th year, as listed below with dates of birth:

June, 1869 — CARL H. BUNKER'91 on the 3d; MISS JANE B. PATTEN'06 on the 8th; and JOSHUA B. BLAIR'93 on the 26th;

June, 1874 — WILLIAM E. HASELTINE '96 on the 27th and MRS. CORA B. GROSS '09 on the 29th.

June, 1879 — WILLIAM R. CROWELL'04 on the 2d; FLETCHER H. BURKE'05 and DOUGLAS C. JILLSON'01 on the 4th; HEENAN T. SHEN'09 on the 5th; HAROLD Y. CURREY'02 on the 10th; BERNARD G. ELIOT'02 on the 19th; PHILIP L. CRITTENDEN'01 and ROBERT B. PETERS'03 on the 23d; RUTHERFORD H. ROGERS'04 and RAYMOND WILLEY'00 on the 24th; HARCOURT W. BULL'04 and D. LEIGHTON ORDWAY'01 on the 25th; CHARLES BITTINGER'01 on the 27th; RALPH P. GIFFORD '02 on the 28th; and EDWIN E. NELSON'02 on the 30th.

Including these 21, the rolls of the Alumni Association will number 81 nonagenarians and also 756 octogenarians.

Obituary

GEORGE N. LEIPER'94, January 2, 1958

GEORGE OWEN'94, April 21

RIGBY WASON'94, September, 1958*

GERARD H. MATTHES'95, April 8*

MRS. FRANK S. CHURCHILL (LUCRETIA M. HALLOWELL)'96, May 4, 1958

PAUL W. LITCHFIELD'96, March 18*

CHARLES E. TROUT'96, April 19

MRS. ALBERT P. MATHEWS (JESSIE G. MACRUM)'97, December 13, 1958

CHARLES B. STEBBINS'97, 1947*

EDWIN R. SHEAK'99, April, 1959

FREDERICK B. STEARNS'99, April 25

ARTHUR M. CONSTANTINE'00, March 29*

WILBUR W. DAVIS'00, April 15

FRANK EMERSON'00, January 27*

HENRY TUBBS'00, July 22, 1958

MRS. ALICE D. BOWEN (ALICE C. DAY) '01, February 18*

JOHN L. JONES'02, April 14

MISS H. ANNA KENNEDY'03, November 12, 1958*

GEORGE A. FAIRFIELD'04, May 25, 1957

SIDNEY M. HENRY'05, March 16*

THOMAS E. APPLGATE'06, October 11, 1957*

WILLIAM K. HOLMES'07, January 3

FREDERICK T. MOSES'07, April 6*

JOHN W. NICKERSON'09, March 23*

GEORGE E. BATCHELLER'10, March 3

CHARLES A. CALLAHAN'10, February 15*

ALLAN J. CHANTRY, Jr., '10, April 9

BERT S. WOHLGEMUTH'10, March 23

LOUIS L. WETMORE'11, March 29*

SAMUEL BOROVY'12, January 9

ROGER W. DAVIS'12, April 13

JOSEPH W. FARWELL'12, April 16

WILLIAM F. MCKNIGHT'12, March 21*

KENNETH FRANZHEIM'13, March 13*

CHARLES W. GOTHERMAN'13, March 25

HAROLD L. HARLOW'14, March 23*

MERVIN W. BLISS'16, February 19, 1958*

FRANK S. HUBBARD'16, August 17, 1958

FRANCIS J. LENEHAN'16, June 20, 1957

ALEXANDER ASTORIAN'17, March 13*

CARL M. GILT'17, March 23*

H. CHANDLER STEARNS'17, March 12*

HOWARD H. SEARLES'19, March 8*

EDWIN C. SHULTZ'19, several years ago

WILLIAM F. ATWOOD'21, April 26

FRED W. WOODBURY, Jr., '22, September 4, 1957

WENTWORTH T. HOWLAND'23, April 8*

CHARLES M. JONES'23, April 12*

RICHARD J. BUNDY'24, July 15, 1958*

DAVID K. GRANT'24, April, 1958

GLENNON GILBOY'25, April 17

CARLOS V. ARELLANO'26, March, 1959*

BENJAMIN F. WOOD'27, September 29, 1958

SHIRLEY D. JOHNSON'29, 1958

GEORGE A. SANDERSON'31, April 12

L. ERIC JONES'35, February 26*

IAN W. MCFADYEN'35, February 5*

ROBERT V. LUKES'38, March 20*

ARTHUR P. McCABE'40, June, 1957*

CASIMIR T. WITTL'42, January 28*

PAUL L. MATTHEWS'52, April 9

RICHARD I. MORGANSTERN'54, March 31*

*Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Baltimore

We had a fine meeting at the Park Plaza Hotel in Baltimore on Monday, March 30. About 50 were in attendance to hear Mr. D. P. Severance'38 tell us of "Recent Developments" in life and curricula at M.I.T. It was also a pleasure to meet Mr. Frederick G. Lehmann'51, new Assistant Secretary of the Alumni Association, who answered the many interested questions during a discussion period.

New club officers were installed: President, Hyman J. Verner'23; Vice-president, Philip V. Darling'40; Secretary, Mrs. Richard L. Steiner'40; Treasurer, Clinton B. Conway'24; Directors, Leon Baral'38, John F. Christopher'48, William Gable'51, Kenneth Jarmolow'48, Charles K. Jones'32, Herman L. Meyer'40, Charles A. Speas'42, Edward Y. Wing'42 — MRS. CHRISTOPHER L. STEINER'40, *Secretary*, 5219 Putney Way, Baltimore 12, Md.

Central New York

The growth of aviation in central New York was the topic for the March 16 meeting of the M.I.T. Club of Central New York. Mr. Frank S. Pittenger, the Commissioner of Aviation for the city of Syracuse, was the guest speaker. After a pleasant dinner at the Skychef Restaurant overlooking the flight line at Hancock Airport, Mr. Pittenger discussed the present and future activity of the airport. He indicated that a figure of a million passengers a year through the terminal building is very real and this will be well exceeded by 1970. To keep abreast of this growth a new terminal building and runway have been proposed for the airport, and he showed us plans which have been prepared for the growth of the entire air field. The new runway would parallel the present one, and the terminal building would be located between the two main runways. The initial financing of the airport construction would be done through a bond issue, but it is expected that within a few years the operations would become self-sustaining both as to bond retirement and additional expansion.

For the climax of the evening, Mr. Pittenger showed a sound film which illustrated in a humorous manner what can happen to a city and its people if the city's airport is closed. Those of us who attended the meeting were very much impressed with the look that we had into the future of the air operations for Syracuse and central New York. — PAUL B. OSTERGAARD, *Secretary*, 111 Sherbrooke Road, East Syracuse, N.Y.

Chicago

On Monday evening, March 30, 135 Alumni, wives, and guests from the Chicago area met in the Tower Room of the

world's largest hotel — the Conrad Hilton — for a social hour and to learn something about the operations and interesting facts that go into the running of a first class hotel. The "M.I.T. Special," served with pieces of pineapple and other fruit in a coconut shell, was a big hit with those who chose to experiment.

At 6:30 an excellent meal was served and those attending were told of the inter-Hilton room reservation system and how it operates. Later in the meal an opportunity was given to put down on a prepared tabulation our individual opinions with regard to the dessert which was served. The gathering was informed that this type of "taste test" is carried on continuously by the food and beverage department to improve the quality of Hilton food. Among the questions to be rated on this test were appearance, sweetness, and crispness.

Following the dinner the half-hour, full-color film called "A Hotel is Born" was shown. The film told the story of the construction of the Beverly Hilton Hotel from an unbroken piece of ground to the finished, glamorous hotel which represents a cost of approximately \$17,000,000. During the course of the film, actual construction of the hotel was shown: the placement of palm trees, selection of designs for china, glassware, rugs, draperies and the like were pictured. Also shown were pictures of the decorations for the various exclusive restaurants within the hotel. The costuming and careful training of Hilton personnel were also covered. At the dedication ceremonies Vice-president Nixon delivered an address before the first of many well-known guests began to arrive from all parts of the world.

Following the motion picture, the head housekeeper of the Conrad Hilton, whose Irish brogue left no doubt of her ancestry, told of the thousands of pieces of linen which are necessary to change and the mammoth cleaning job that must be done in the hotel's 3,000 rooms.

After this talk the entire group made a tour through the hotel's telephone switchboard room, seeing the extensive operation that is maintained to handle the tremendous number of calls in this one large building. The tour was completed with a short visit to the main kitchen, where the group viewed the large quantities of food that are prepared and served in many rooms throughout the hotel.

From the comments voiced at the end of the evening, the people who attended experienced a pleasant, interesting, and informative meeting. — JOHN T. SHUTACK'43, *Secretary*, Booz-Allen and Hamilton, 135 South LaSalle Street, Chicago 3, Ill.

East Tennessee

One of the Club's rare meetings was held at the C'est Bon Restaurant on April 2, occasioned by a visit to Knoxville by Donald P. Severance'38 and Fred G. Leh-

mann'51, respectively the Alumni Secretary and his assistant. Don gave us a historical review of changes in Institute courses, enrollments, and student distribution; Fred centered his remarks on the influence of Alumni upon the school, covering events all the way from the successful resistance in 1904 to absorption of the Institute by Harvard to the recommendation by a visiting committee that the mining engineering course be eliminated.

Alumni and guests present included Dr. and Mrs. Robert D. Birkhoff'45; Mr. Bernard R. Fuller'09 with his daughter Mrs. G. L. Kaman; Mr. and Mrs. Albert G. Kern, Jr.'34; Mr. and Mrs. Archibald H. Kinghorn, Jr.'20; Dr. and Mrs. Arthur J. Miller'34; Mr. and Mrs. William Nixon'31; Mr. and Mrs. George P. Palo'28; and Mr. and Mrs. Robert W. Schede'43. George Palo, Honorary Secretary in the Knoxville area, also had as guests Robert H. Marquis, Jr., and Joseph R. Parrish, Jr., high school students who are looking toward the Institute. From this area where southern schools attract most of the high school material, there are now six freshmen at the Institute; and George reports that they are all doing very well. An election was held, after which George was handed the gavel by Bob Birkhoff. The other officers, not being present to defend themselves, were re-elected. — ROBERT FORBES'33, *Secretary-Treasurer*, Tennessee Valley Authority, 708 Union Building, Knoxville, Tenn.

Florida

Our Club had its first meeting in some time on Friday, March 20, 1959, at the Timuquana Country Club. There were 13 Alumni present for the meeting and 8 more who were there in spirit but could not attend because of illness or business. Mr. John W. Sheetz, 3d,'42 was our guest speaker. He is executive secretary for development at M. I. T. and brought us up to date on the Institute with his well organized and informative message and beautiful selection of slides.

We expect that this will be the revival of an active club in the Jacksonville area and look forward to our program for next fall. Incidentally, both the *Florida Times Union* and the *Jacksonville Journal* gave us good announcements on March 17 — W. STANLEY GORDON, 1653 Mitchell Avenue, Jacksonville, Fla.

Great Britain

Professor T. K. Sherwood'24 and Professor R. F. Baddour'49, with their wives, dined with the club on March 13. They were on a flying visit to Moscow, and they touched down in London for only one night. We were, therefore, especially lucky to have them and we much enjoyed their company; they even found some old friends among us. They told us of doings at Tech, and Professor Sherwood showed some excellent colored slides.

We are always glad to see members of the Faculty or Alumni (and their wives) who can tell us about doings at Tech. If you are going to be in London, give us notice and we shall be glad to entertain you at dinner.—P. V. DANCKWERTS, *Secretary-Treasurer*, Imperial College of Science and Technology, Prince Consort Road, South Kensington, London, South-west 7, England.

Kanawha Valley

The election of new officers and an enlightening speech by D. Hugh Darden were the high lights of the March meeting of the M.I.T. Club of the Kanawha Valley. A total of 38 members and wives attended the meeting, which was held at the Charleston Press Club.

The members first unanimously elected the following officers for the year 1959–60: Howard A. Kinzer'32, President; Alexander S. Giltinan'47, Vice-president; William E. Moore, 2d'50, Secretary-Treasurer; and Arthur J. Power'42 and Eben R. Hill'55, members of the executive committee.

The business over, the club settled back to hear D. Hugh Darden, Executive Secretary of the Educational Council, speak on the topic, "Going to College Today." The audience response indicated that this was a very timely and informative talk, enjoyed very much by all those present.—WILLIAM W. MOORE, 2d, *Secretary*, 1555 Bridge Road, Charleston 4, W. Va.

Miami Valley

The first meeting of the 1958–59 season was held November 20, 1958, at the Van Cleve Hotel, Dayton, Ohio, with Donald R. F. Harleman'47, Associate Professor of Civil Engineering at M.I.T., as the speaker. Attendance was modest, but enthusiasm and appreciation of Professor Harleman's interesting talk and subsequent general discussion more than compensated for the small turnout.

The Hotel Gibbons in Dayton was the scene on March 4, 1959, of the second dinner meeting of area Alumni. Mike Gibbons'06 provided a sumptuous chicken dinner for the 20 present—ten civilians, three students, and seven staff members of the Air Force Institute of Technology. Although the conviviality was limited to one hour, a good start was made in spading up common interests among the three groups in preparation for the tour of the Institute's facilities.

With Professor Paul Keister'39 arranging for the bus transportation and providing the guiding hand, the troupe absorbed a concentrated summary of the history, layout, objectives, curriculum, and laboratory techniques of A.F.I.T. Naturally we all were amazed at the dedication and accomplishments of both the staff and the student body. The survey certainly supported the wish of many people in the area that the Institute could be made available to the general public to round out Dayton's graduate instruction in science and engineering. Of course it is realized that the direction of A.F.I.T. leans rightfully toward "air" and that security in such a case would be a difficult problem, but the sentiment is representa-

tive of the envy with which we left the "hill." In no one was this sentiment stronger than in the person of L. L. Custer'13, who had regaled the group at dinner with some of his experiences in the early days of flying.

The third meeting of the club was a plant trip in April through the McCall Corporation printing plant, and the fourth will be the annual family picnic in Hills and Dales Park in June.—CHARLES M. BILLMAN'25, *Secretary-Treasurer*, Winters National Bank and Trust Company, Dayton, Ohio.

Monterrey

Recently the M.I.T. Club of Monterrey, Mexico, commemorated its 30th anniversary. To this end, two social events were organized: the first was a formal dinner on Tuesday, March 10, at the Casino de Monterrey; the other was a luncheon on Wednesday, March 11, at the Cerveceria Cuauhtemoc Gardens. As honor guests were Mr. John J. Wilson'29, President of the Alumni Association, and H. E. Lobdell'17, Executive Vice-president of the Alumni Association, and his wife Conchita. One of the high lights of this commemoration was nominating Alberto P. Gonzalez'01 as Decano of the M.I.T. Club of Monterrey. Eliot Camarena'44 said a few words in praise of this nomination. Bernardo Elosua'23 presented a brief history of the 30 years of the M.I.T. Club of Monterrey.

Attending were: Rodolfo Barrera'49, Commodore Penn Leary Carroll'17, Juan Celada S.'44, Julio de la Fuente'33, José V. Ferrara'54, Manuel Gerardo Ferrara'58, Bernardo Garza Sada'51, Walter H. Triplett'12, R. E. Valentine'23, Eugenio Garza Sada'14, Alberto P. Gonzalez'01, Manuel R. Llaguno'46, Jaime L. Llaguno'58, Lauro Martínez Carranza'20, Raúl Sada Rangel'49, Andrés M. Sada'52, Camilo G. Sada'32, Leonardo Siller'28, Marcos Manuel Suárez'55, Bernardo Elosua'23.—ELIOT CAMARENA'44, *Secretary*, Apartado 360, Monterrey, N.L., México.

New Haven

It hardly seems possible that just a year ago we closed our 1958 season with our annual outing at the Pine Orchard Country Club in Branford. It was held on the 21st of June, and it cannot be said that the weather exactly fitted the occasion. Most of us, however, spent an enjoyable afternoon playing cards in the club house. In spite of the rain we were warmed by the cheery atmosphere and the good fellowship that prevailed. The evening brought one of those famous Pine Orchard buffet dinners to which we always look forward; and after a short business meeting at which this year's officers were elected, we were entertained by a colored movie on the "Wilderness Alps of Stehekin." The peaks, forests, and glaciers that were shown are of the Northern Cascades in Washington state, particularly the beautiful scenic area of Lake Chelan and the Stehekin River.

The officers for the new year elected at that meeting were as follows: Gregory G. Gagarin'43, President; John P. Lynch, Jr.'52, Vice-president; William J. Lyons,

Jr.'48, Secretary; Philip A. Horrigan'48, Treasurer; and Roger W. Pursell'28, Governor at Large. The new season was opened informally on September 16, 1958, when the officers met with Don Severance, Secretary of the Alumni Association, to plan the regular meetings for the year 1958–59. This was to be our 40th anniversary year.

As a result of that planning we were fortunate to secure three very interesting speakers, and we began our formal season on November 13. The meeting was held at the Colonial House in Hamden and our guest speaker was Dr. Stanley Backer'41 of the textile division of the Mechanical Engineering Department at M.I.T. He spoke on "What's New in Textiles for Home and Industry." It was a very interesting talk, and we learned a lot about a subject most of us simply take for granted.

In December we had the misfortune of losing our president when Greg Gagarin accepted a position in Chicago and left the area. Jack Lynch has assumed the duties of president and has done a remarkable job of keeping things rolling in spite of being a bit shorthanded.

February 18, 1959, brought our second meeting, at which we departed from the technical side of things and were rewarded with an enjoyable talk by Jack Wood'17, M.I.T. Sailing Master. Jack showed us movies of the M.I.T. crews and Fiberglass boats as well as several exciting races. He spoke on the athletic program at Tech and we were all very much impressed. At that meeting, also, our new directory of M.I.T. Alumni in the New Haven area made its first appearance; it was then mailed out to all active members. The comments so far have been very encouraging. This is our first shot at this sort of thing, and we are very much interested in your comments. We have tried hard not to overlook anyone, but that can easily happen in a club as large as this one. Please let your Secretary know of any errors that you may find.

The high light of our 40th anniversary season was past presidents' night on April 22. We had Dr. John E. Burchard'23, Dean of the M.I.T. School of Humanities and Social Studies, as our principal speaker at the Waverly Inn in Cheshire. He presented a very enlightening talk on the "Main Unresolved Problems of Modern Architecture," illustrating with colored slides. Dr. Burchard is an excellent talker and the meeting was enjoyed by all those present. It was particularly heartwarming to see many of our old friends who had returned for the anniversary celebration.

So here it is June again, and another annual outing is coming up. As usual we meet at Pine Orchard and we are looking forward to the occasion. Our fingers are crossed in hopes of good weather for the 20th of June. This brings a successful year to a close, and it is rewarding to see the results of the planning and the number of our fellow Alumni coming out to the meetings. We are particularly happy to see so many new faces as well as the regulars. As we go into the 41st year this fall, we are in hopes of an even more successful season. Thanks to all who have helped this year.—WILLIAM J. LYONS, JR.'48, Secretary, 116 Corbin Road, Hamden 17, Conn.

Northern California

Since their election, the new officers of the M.I.T. Club of Northern California have been active in organizing committees and planning functions and activities to build up the club. The new officers are: C. J. Matthew'43, President; J. D. Rittenhouse'40, Vice-president; J. H. Arnold'31, Vice-president; D. K. McNear'48, Secretary-Treasurer; K. Keays'55, Assistant Secretary-Treasurer.

The officers wish to report to the club members that they feel fortunate in having the following Alumni accept positions as chairmen of the following committees: D. D. Scarff'41, program; D. E. Gushee'50, membership; R. Hereford'24, constitution; and J. H. Arnold'31, directory. — DENMAN K. MCNEAR'48, *Secretary-Treasurer*, 65 Market Street, San Francisco 5, Calif. KEATINGE KEAYS'55, *Assistant Secretary-Treasurer*, 2239 40th Avenue, San Francisco, Calif.

Oklahoma

On April 22, 1959, the Oklahoma City group of the M.I.T. Club of Oklahoma played host to all Alumni in the state for a special spring meeting to welcome Professor and Mrs. Jerrold R. Zacharias and Professor and Mrs. Jerome B. Wiesner. The Alumni and wives held an evening meeting at the Oklahoma City Golf and Country Club. After a social hour and dinner, Dr. Zacharias spoke briefly about the progress his Physical Science Study Committee is making and Dr. Wiesner talked about the new Research Laboratory of Electronics, of which he is director.

During the 1958-59 season, the Oklahoma City section has stepped up its activities. We continue to work with the local public school officials on mathematics and science programs and to follow developments of the Physical Science Study Committee. Several of our Alumni are on the M.I.T. Educational Council for the purpose of interviewing students who wish to enter the Institute; and on April 29, Mr. D. Hugh Darden, who heads up the Council at Cambridge, paid us a visit here in Oklahoma City. Dr. Herb Kent'49 is the chairman of the Alumni Fund committee and, although our campaign is still on, we are sure to have good results; our good friend Joe Conrad did not return, but he did such a fine job organizing the fund committee last year that he probably did not think it necessary to come back.

Last fall the Western Electric Company had the Alumni visit their pilot plant in Oklahoma City at the invitation of Mr. Joe West, manager, who studied recently at the special postgraduate school for management at M.I.T. Mr. Bob Hendrickson, comptroller for the Western Electric plant, assisted in the tour; he has a son who is at M.I.T. now. The pilot operation employs only 400 but the force will be 4,000, including 80 engineers, when the new plant is finished in 1962. Many new industries have found adequate space, favorable tax laws, and high caliber labor in the Oklahoma City area.

On December 29, 1959, we invited some 25 students who were home on Christmas vacation to lunch at the Petroleum Club. The Alumni are helping to find summer

employment for those who want it. This program we feel is very worth while, and perhaps other Alumni organizations could do the same.

On Saturday afternoon, February 28, 1959, we were guests at Tinker Air Force Base. The Alumni and wives took a tour of two of the installations at Tinker: the electronic data processing establishment, and the 33d air division. Colonel Ken Swanson'42 is in charge of the computer center, which is one of the largest in the world. This was the first time most of the visitors had ever had any experience with the electronic brain and the enormous amount of work it can turn out in a short time. We went next to the 33d Air Division, an aircraft control and warning organization of the Air Defense Command. The group saw actual aerial intercept problems on radar and the plotting boards, as jet fighters flew practice missions. We finished the day with a happy hour and dinner at the Officer's Club.

It seems that each of our functions attracts more Alumni, and I believe that the inclusion of the ladies into some of our activities is partly responsible. — JOHN P. DOWNS'51, *Assistant Secretary*, 2001 Northwest 20th, Oklahoma City 6, Okla.

Puerto Rico

The M.I.T. Club of Puerto Rico met on February 23, 1959, at the Reserve Officers' Club at San Juan and elected the following to its board of directors for 1959: President, Angel A. del Valle'43; Vice-president, Richard L. Bolin'50; Treasurer, Ulises Barros Loubriel'55; Secretary, Antonio C. Kayanan'42; board members, Daniel Driver'50 and Manuel Viñas Sorba'45; past President, Pedro A. de Castro'40.

The board of directors met for lunch at the Swiss Chalet on March 3. It was agreed at this meeting that the club should have four other meetings during the year: a smoker in April; a picnic in June with the families; either another smoker or another picnic in August, depending on the success of the previous meetings and on the general wishes of members; and finally a formal dinner in October. Each meeting will be arranged and managed by different members of the board.

Members (20) of the club gathered for a smoker on Wednesday evening, April 8, 1959, at the Cervecería Corona Clubhouse, where drinks were served on the house. Dick Bolin and Pedro de Castro made the arrangements, which included the showing of interesting films. The next club affair will be a family picnic which may be held at the El Convento Beach on the northeast side of the island. — A. C. KAYANAN, *Secretary*, P. O. Box 5346, Puerta de Tierra Station, San Juan, Puerto Rico.

São Paulo

The club met for the first time this year in the very pleasant surrounding of Dave'23 and Mrs. Davenport's home on the Represa Guarapiranga — Chácara Caiçara. On Friday, March 27, 1959, from 4:00 in the afternoon to 8:00 in the evening, we were the guests of Mr. and

Mrs. Davenport at a cocktail party in honor of Mr. and Mrs. David W. Skinner'23. Mr. Skinner is a past member of the executive committee of the Alumni Association.

Dress was informal and wives, fiancées, and girl friends were invited. Dave suggested that water addicts among us bring bathing suits; your Secretary suggested that landlubbers take sweaters instead. For those who did not know the route, a car flaunting an M.I.T. banner across the windshield led the way from the Church Clock in the Largo to the Davenports' home at 3:45 P.M. and again at 4:15 P.M. — MARC L. AELION'51, *Secretary-Treasurer*, Laboraterapica-Bristol S/A, Caixa Postal 2240, Sao Paulo, Brazil, S. A.

Southern California

Harold Crowell'15, a past national President of the Associated General Contractors, attended their 1959 installation of local officers and directors in the Southern California chapter this past January.

Robert M. Kallejian'16, Secretary of the Hollywood Service Club, was singled out by this group for special thanks and a round of applause at their last meeting for his work as bulletin editor during 1958.

Hi Beebe'10, Archivist of the M.I.T. Club of Southern California, is our most ardent booster. As chairman of the register committee, he has seen that our register is now a part of the Library of Congress, located in strategic locations at M.I.T. as well as in the office of Norman Topping, President of the University of Southern California.

The M.I.T. Club of Southern California had a dinner meeting on March 11, 1959, at the Institute of the Aeronautical Sciences' building. Guest speaker was Dr. Edward L. Bowles, a consultant to the president of Raytheon Manufacturing Company. Dr. Bowles spoke about his experiences as personal advisor to Secretary of War Henry L. Stimson on radar, communications, and related electronics.

The Alumni attending the meeting were: P. K. Bates'24, C. Cataldi'50, B. S. Coleman'19, R. M. Copsey'44, J. S. Cullison'41, J. L. Goheen'37, P. Howard'58, J. Hyman'57, T. G. Loomis'44, S. E. Lundden'21, P. Neuschatz'51, W. K. Overturf'40, H. S. Pardee'09, F. F. Reed'24, R. B. Stringfield'15, A. F. Wagner'38, L. Young'50. — JOSEPH W. MARSHALL'53, *Secretary*, Bymco Engineering, 904 West Hyde Park Boulevard, Inglewood, Calif., LOUIS YOUNG'50, *Assistant Secretary*, 2234 South Spaulding Avenue, Los Angeles 16, Calif.

CLASS NOTES

1891

Our excellent classmate Arthur W. Pierce lives in Pittsfield, which is the heart of the mountainous section of western Massachusetts. Yet with all the rough weather and transportation difficulties of this rugged Berkshire region, remote as it is from Boston and Cambridge, Arthur has been one of the faithful, frequently present at our meetings. None of us is more interested than he in all class affairs and functions.

Arthur is a distinguished man in his section of the commonwealth. As an eagle scout and a worker with boys, especially the handicapped, he has become famous, as the following clipping from the *Berkshire Eagle* will demonstrate: "Arthur W. Pierce, scoutmaster, and the members of Boy Scout Troop 27 of Coolidge Hill School (formerly the Berkshire School for Crippled Children) were honored today by the local Rotary Club.

"Mr. Pierce and the boys were guests this noon at the Rotary luncheon at the Wendell-Sherwood Hotel. A plaque was presented to Mr. Pierce, on behalf of Rotary, by William D. Dyer, Boy Scout executive and a member of the club.

"Mr. Pierce, who will be 87 next month, still travels Berkshire County via bicycle. He was born in Turkey, is a graduate of M.I.T., and retired as a General Electric engineer in 1932. He has been active in scouting since 1921 and a scoutmaster of Troop 27 since 1951. He received the silver beaver award in 1946; a service pin in 1951; and was the sole camper to receive the coveted Order of the Arrow at the Camp Eagle dress retreat in 1954. He also was honored for his scout service by the Pittsfield Chamber of Commerce in 1954."

The following letter from Arthur Pierce was written in March: "I do not know whether Cal Bunker, who was in your section of the freshman class of '91, was on the train from Auburndale which I took the morning of the start of the '88 blizzard. Our anniversary storm here in Pittsfield reminded me that I was careful to take enough money with me to pay for lodging if the trains were stalled. I am not at all sure that I had met him then, though he was living in Auburndale at the time. I got back to Auburndale, where I was boarding at the missionary home, all right; but one of the boys in our section, from South Framingham, could not get to Boston that day.

"You will gather from my reference to Bunker that I am interested in your 1891 news in *The Technology Review*. Usually that is the first thing for which I look. The bicycle is still running and carried me an average of four miles a day for every day I was in Pittsfield in 1958. Traveling conditions have been such that I rode 57.7 miles in January, 51.8 in February, and 36 miles so far this month.

"I had a slight stroke December 25, 1957, which affected my speech and eyesight. Now I can speak as well as usual and new glasses help with reading, but I find I have to go slow and concentrate on details to avoid mistaken impressions. When I applied (last June) for my routine physical examination for my customary camping session at our October Mountain Boy Scouts of America camp, my doctor said his conscience would bother him if he let me get so far away from a doctor and hospital and take part in a young folks' program. However, he was quite in favor of my going on a three weeks' railroad and bus trip to California by way of Chicago, Salt Lake City, Omaha, Grand Canyon and other parks, and returning via Denver. This trip was arranged by Baltimore and Ohio Railroad for Golden Agers and friends and geared for older people, with medical and nursing

service always available. We had over 200 in our party, and I enjoyed my first trip west of Chicago very much.

"I have six boys in my troop this year, only one of whom can get around without crutches or a wheel chair. That makes advancement in scout rank quite an unusual problem. Yours truly, Arthur W. Pierce."

And here is the last word from Mrs. Revell, Carl Bunker's daughter. Good for Carl! "Dear Reverend Brown: Papa is back at the nursing home and is making remarkable recovery. I believe he is more comfortable now than he has been for several years. Best wishes to you from my Dad and me, Nellie Revell."

The following letter was just now received from our President: "Dear Channing: I think it safe to announce that the Class of '91 will hold its annual meeting and lunch at the Brookline Country Club as usual on Saturday, June 13, 1959, at 1 o'clock. I will place the order as soon as I hear from you. Reply postal cards will give all the information we need. It would be a good idea to state: 'The Treasurer will pay for the lunch with funds on hand and what he collects as dues.' Members will recall they are requested to bring their sons, daughters, or others to the meeting. Am glad to know you are returning to Littleton May 1. Now we can get together. Hope you are well! Good luck, Linfield."

What a good, generous host we have in our new president-treasurer, J. Linfield Damon of 295 Kent Street, Brookline, Mass. Make your plans now, and come if you can! We shall all look for you.—WILLIAM CHANNING BROWN, *Secretary*, 36 Foster Street, Littleton, Mass.

1894

Another academic year comes to an end soon, and the Class of 1894 reaches the completion of 65 years of Alumni existence, although we are greatly depleted in numbers. As of the date when these words are written 18, or 13 per cent of the 138 who received bachelor of science degrees in 1894, still survive. Of the large number of "special" students associated with our Class for one term or more, exact figures cannot be given; but according to the Secretary's records, there are at present about 15 survivors, the percentage being somewhat lower than for the graduates receiving S.B.'s. This probably has no statistical significance as to longevity, for in the early years before 1900 the number of special students was often very large, and degrees were not held as essential as in more modern times.

It is now with much regret that we report belatedly the death of Rigby Wason at his home, Highfield, Totland Bay, Isle of Wight, England, in September, 1958. This information was sent to the Alumni Office by his son, but no details were given of his father's career. Wason entered the Institute from Girvan, Scotland, in 1889, as a member of the Class of 1893, and was associated with that Class during most of his student days at M.I.T.; but he finished his senior work and thesis and received his degree with 1894 in electrical engineering. He is well remembered as a very affable, able, and interesting fellow student, typically English in speech and bearing. After

graduation he returned to Scotland and became attached to an engineering firm there. Much later, he retired to Totland Bay, Isle of Wight, where he died. Unfortunately, it is impossible to give other details as to his career or his family, except that the sad news was conveyed by a son. He apparently never came to Boston for any meetings of the classes with which he was associated.

It may be of minor interest to some that your Secretary has again, for the 16th time, been elected chairman of the board of governors of the Refrigeration Research Foundation, and recently attended the annual meeting of that scientific group in Washington. While there, he called up Charles Abbot, who is still actively engaged in his really monumental studies and reports on long distance weather forecasting, a great research which is of vast importance. Abbot reported that he and his wife will be in Cambridge for our 65th reunion, for the inauguration of Dr. Stratton as the new President of M.I.T., and for Horace Crary's dinner to the Class. It is hoped that a good group many enjoy Horace's hospitality, but it cannot be other than a comparatively small number. It will be fine with even a few of us. Last call, come if possible.—S. C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1895

Through the courtesy of Ada Wood Peterson, whose late husband Guy C. Peterson was 1901 class secretary, we have received notice of the death of Gerard H. Matthes on April 8, 1959. We quote from the *New York Times*: "Gerard Hendrik Matthes of the Broadway Central Hotel, a retired consulting engineer and long a leading flood-control expert, died Wednesday in Columbia Hospital after a month's illness. His age was 85.

"Mr. Matthes received a citation and award for exceptional civilian service from the War Department in 1944. He was named an honorary member of the American Society of Civil Engineers the same year and received the Norman Gold Medal in 1949.

"He invented tetrahedral block revetments for river banks, designed a topographic slide rule for use in plane-table surveying, and invented a mechanically controlled aerial camera. Mr. Matthes also was the author of many papers on river hydraulics, flood control, and aerial photography.

"He was born in Amsterdam, the Netherlands; came to the United States in 1891, and became a citizen five years later. He received a civil engineering degree from M.I.T. in 1895. After holding various engineering and flood-control posts with federal and state governments and in private industry, Mr. Matthes became assistant engineer in the War Department in charge of surveying the Tennessee River and its tributaries. The project, from 1920 to 1923, included the first aerial survey of rivers undertaken by the War Department.

"In 1950, as a member of the Engineers Joint Council, he participated in a national water policy study for the Water Resources Policy Commission. He retired from government service in 1945 and as a

consultant in 1957. Surviving are his widow, Mary; a daughter, Mrs. Florence Matthes Stephens; three grandchildren; and nine great-grandchildren." — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

From Carole A. Clarke '21 the Class acknowledges the receipt of a Newark, N.J., newspaper clipping about the death of Paul W. Litchfield at Phoenix, Ariz., on March 18. Similar notices sent from several cities showed Paul to be a national figure. The Class will miss him as a loyal member; a letter expressing the sympathy of the Class was sent to Mrs. Litchfield and her family.

The Secretary recently discovered a bronze tablet on the abutment of a stone arch bridge that carries Boston Park traffic over Huntington Avenue at the Brookline line. It has on it the names of the president, governor, and others and of "George Harkness, Bridge Engineer." M.I.T. Class of '96 Course I, the Secretary thought.

A demand for fulfillment of a promise to write a letter was made on a Course I man. The following response has been received: "April 13, 1959, 51 Fifth Avenue, New York, N.Y. Dear Classmate Driscoll: What I understand is that The Technology Review wishes notes of graduates of M.I.T. Being a graduate in 1896 in Course I, Civil Engineering, my experience has been along that of the course. I have been a member of the Society of American Military Engineers and, if I remember correctly, I was national president. I have been a member of the American Institute of Consulting Engineers and was secretary and then president of the Institute. From the professional standpoint that is considered the most exclusive engineering society. I am now secretary emeritus. I am a Navy life member of the New York Yacht Club. I did a great deal of fencing with the foil, the épée, and the saber — and continued that until my opponents got relatively younger and younger. Very truly yours, Rear Admiral R. E. Bakenhus, U. S. Navy (retired)."

Henry Hedge is coming along, but slowly, since his return home from the hospital. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

1897

Through the Alumni Register we have received the sad news of the death in 1947 of Charles B. Stebbins, Course XIII, S.B. The last address reported was 84 Mooles Avenue, Bloomfield, N.J. In our 1912 yearbook he was listed as engineer, Sheffield Car Company, Three Rivers, Mich., married with three children.

Probably this issue of The Review will reach you before Alumni Day, June 15, of which you all have received due notice. In order to get definite information as to how many would attend an informal '97 class luncheon the day after Alumni Day — namely, Tuesday, June 16 — we sent to members of the Class a circular letter in April enclosing a post card which was to be returned.

The following came from George Wadleigh, dated March 31: "Dear Jack: Ere this you should have had an answer to yours of February just before you and Annie look off for Florida. I hope that the trip to the South was a real success and brought a halt to flu and the like. We here came through with some annoying colds, but they were not in the flu class.

"As to your reunion question, this year I expect that a lunch or light dinner together away from the general mass could be very gratifying and I am for it though we could expect very few at a dinner and then only in Boston proper. Brainerd lives not far away in Scarsdale, and I'll phone him to see how he feels about matters. Perhaps Irénée would come on for the special occasion of inauguration of Dr. Stratton. Dan Patch '02, with whom I maintain an infrequent correspondence, or Harry White '99, with whom I lunch frequently, saw Irénée at Wilmington around Christmas time and reported him in excellent shape.

"At Christmas I received a card from Pete Noble. His wife left the Institute such a generous sum a few years ago that perhaps we should not expect more, but Pete's name and one or two others would bring us up to Number One in percentage, where now we are Number Three.

"With snow gone and a man clearing up the garden I'll get up the hill shortly and see the Reverend W. C. Brown '91 before he takes off to his summer home in your state. Brown as '91 secretary gets excellent notes for a class with very limited numbers extant.

"No more now as my desk must be cleared of accumulations collected while income tax was to the fore."

Having recently returned from a month's visit to Winter Park, Fla., your Secretary has no further news. It was a real pleasure to enjoy many days of warm sunshine in that beautiful little city of about 22,000 with its many lakes, handsome residences, and an abundance of flowing shrubs — azaleas, camelias, and others.

Furthermore, the presence of Rollins College offers a wealth of interesting diversions: lectures, plays, concerts, and museums. The new plant of Martin Company in Orlando only a few miles distant employing several thousand has created a demand for real estate in Winter Park, especially by officials and supervisors of the company. — JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

There have been no '98 class notes since January, 1959, because: 1) there is, at present, no assistant secretary of the Class; and 2) the Secretary since last fall has been obliged to care specifically for his eyes to the exclusion of reading and writing for '98 class notes. The eye trouble of the Secretary started in the summer of 1957 but was not very serious in our opinion. After various consultations with and treatments by a prominent eye specialist, we kept on life about as usual, including work for '98 and M.I.T. class notes, 60th reunion, and all. With the passing of our dynamic classmate and long-time friend, George T. Cottle, it

seemed wise for us to give our eyes a surcease from reading and writing for a while.

Hope to see many of you at M.I.T. on Alumni Day, June 15, 1959, out of courtesy to Dr. Stratton and M.I.T. and to discuss the '98 situation. — EDWARD S. CHAPIN, *Secretary*, 2 Gregory Street, Marblehead, Mass.

1899

A half page, five column spread in the *Louisville (Ky.) Courier-Journal* for December 28 shows what an influence the life and inventive genius of Carroll Churchill have on the poverty stricken, underprivileged people in the communities where he has lived. Carroll was born in Oberlin, Ohio, and graduated from Oberlin College before he came to Tech. After he received his Tech degree he went to Seattle, Wash., near which city he became a laborer in a mine. Within three months he had risen to the position of chief engineer of the company, at \$350.00 per month, thus demonstrating his ability to repair electrical equipment. Less than a year later he went to Westinghouse, the Turtle Creek plant near Pittsburgh; here, in less than a year he was personal assistant to George Westinghouse. But during that period his fiancée had graduated from Wellesley. With her he went to India, where her parents were missionaries. There he came to know the plight of the Indian hand weavers — there were 30 million of them — who were so desperately handicapped by their inefficient looms that their products could not compete with those of Great Britain in spite of wage differential enormously in their favor. In response to this need Carroll developed the push-loom, for which he was awarded a gold medal by the Indian government. Other looms followed, all based on Churchill's study of the reduction of friction; and further awards and honors came his way.

Finally the Churchills decided to leave India. They fully intended to return, after what should have been a long-delayed vacation in their native land. But, finding their own country at war soon after their arrival, Carroll went from Oberlin, where he was visiting, to nearby Elyria, Ohio, where he went to work with Captain J. V. Martin and helped perfect the first retractable landing gear for airplanes. The plane on which he worked now reposes in the Smithsonian Institute. It was while visiting Oberlin that Churchill renewed his acquaintance with President Hutchin and accepted his offer to come to Berea College. Little did he know that he was about to embark on the major adventure of his career as founder, owner, and director of Churchill Weavers.

Even then Berea was the center of hand weaving — but the weaving was done on traditional looms, slow and hard to operate. Back in 1904 Churchill, as a missionary engineer, had developed a new type of fly-shuttle loom that won a gold medal from the Indian government. He had won other awards for hand looms, and the British Government gave him a travel grant to study the textile industry at Manchester, England. It was in Berea, however, that Carroll perfected his fly-shuttle

loom, and made it the fastest hand shuttle loom in existence. This loom's chief virtue lies in the reduction of physical effort on the part of the weaver, thus enabling him to produce more and better work. The loom is still in use at Churchill Weavers today. Carroll set up one loom in the Churchills' third story room. A friend who operated a gift shop stocked a few of the Churchill products they sold, and the Churchills were in business. Churchill Weavers today has between 45 and 50 looms in operation. It sometimes employs 150 people at capacity. There is also a research department, headed by Carroll, which is constantly striving to improve the efficiency of the looms. The weavers produce baby blankets, for which Churchill is famous; scarfs, one of the first items; stoles; bed jackets; bed blankets; and many other hand woven articles which are now sold throughout the world.

James Ellery has made the headlines. The following story is taken in part from the *Gloucester* (Mass.) *Independent Republican* of February 19: "It was James Ellery night at the February meeting of the Lenord Club (Annisquam). He was honored with a plaque and given the floor, but he did not say a word about his pet subject for 40 years—the Henry George single tax reform. Some of his hearers were a little disappointed, for the club had been talking about devoting an evening to the single tax. But Ellery, a descendant of one of the signers of the Declaration of Independence, evidently did not want to take advantage of a captive audience. He told the club president in advance that the single tax topic would have to rest that night. Instead, name by name, Ellery called the children he went to school with and traced their lives, drawing the comment that he certainly had a good memory. Ellery's plaque bears the inscription: "to James Benjamin Ellery, February 18th '59—a fine example of true Yankee determination and persistence."—BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass., PEBCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain 30, Mass.

1900

The usual annual reunion of the Class of 1900 will be held June 16 and 17 at the Endicott House in Dedham, Mass. We hope that as many of the Class as possible will attend the Alumni reunion in Cambridge on the 15th and then at the Endicott House the following two days. Details of this reunion have been given in a letter sent to all members of the Class some weeks ago.

The death of Frank Emerson on January 27, 1959, has been reported by the Lowell, Mass., press. Frank attended M.I.T. between 1895 and 1898. He was on the 1900 football squad. His life work was in the field of sanitary engineering and water supply. He was associated with E. F. Dwelley (M.I.T. 1890) between 1899 and 1902 and with F. A. Barbour, Sanitary and Hydraulic Engineers, from 1902 to 1913. He was city engineer in charge of public works, Peabody, Mass., 1914-1924 and engineer and superintendent of public works, Melrose, from 1925. We have little information regarding his

later life, but apparently he was again associated with F. A. Barbour until his retirement. He was a native of Lowell and made his home there the greater part of his life. He was a 32d degree Mason and an honorary member of the New England Water Works Association. He is survived by four sisters and a brother.

We are also informed of the death on March 29 of Arthur M. Constantine. He was a newspaper man and had been associated with the *Boston Evening Record*, *Boston Advertiser* and *Boston Herald*. For many years he had lived in Mexico City, where he was at one time connected with International News Service. His original home was in the city of Newburyport, Massachusetts.

Your Secretary also reports, with sadness, that his own wife, Lou, died on March 14 last.—ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

1901

I have received word of the death of Mrs. Alice C. (Day) Bowen residing in Melrose Highlands, on February 18, 1959, at the age of 78. She died in the Melrose-Wakefield Hospital after a sickness of three days. She was the former principal of the Swan School in Medford and for 30 years was a member of the Medford teaching staff. Mrs. Bowen was the widow of Archer C. Bowen, for many years principal of the Franklin School in Melrose. She was a graduate of the Melrose Schools, Salem Teachers College and Course VII, 1901, at M.I.T. She was a member of the National Education Association and was past president of the Medford Teachers Association. She leaves two sons and five grandchildren.

Harry White, XIII, one of our faithful members from New Jersey, sends me the complete poem which includes the last part as given by Anthony Peters. I hope that this was read at the reunion. It should be one of the high lights.

I was glad to receive the following from Edward Howes, IV, of Stamford, Conn. "As I am now in my eighties, I do not bust around very much. However, I find plenty of things to occupy me—painting, writing, fishing, three grandchildren, garden work (moderate), and a good appetite. You will understand from the above that I am O.K. from the waist up—the old legs aren't what they used to be. I lost my wife 10 years ago and the house I built for her 50 years ago is now my married daughter's where I live contentedly and happy—playing out the string."

Austin T. Hyde, X, Damascus, Va., says: "Retired and nothing of interest." From Ed Church, XIII, Elmira, N.Y. "Sorry I can't help you out, but what I spend my time at would not interest anyone else; it does not interest me very much. I seem to be doing well physically: hope I don't live to be 100."

The account of our June reunion will have to go over to the November issue. I hope that those of you who have not sent in your class letter reply will do so right away.—THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

Saylor in a letter to Dan Patch writes of his activities as follows: "I haven't been doing any plain or fancy skating this winter, but if I felt any better I think I'd better see a doctor. I gave up editing the *Journal* January 1, 1958, to write "The American Institute of Architects' First Hundred Years," which the Institute published in May, 1958. Then I went into semi-retirement—half time and half pay. My wife says the only difference she can notice is that I work 18 hours a day instead of 24. But the deadline pressure is off and I do about what interests me—a great life."

Referring back to Dan's winter sports, a picture in the Stoneham paper recently showed Dan on his double-runner sled with a dozen youngsters packed on behind him off for a fast coast down a long slope near his home. The double-runner has been owned by Dan since 1894; it was built 75 years ago and noted for its speed due to the extra large size of the sled shoes. This item written in April may help to make the heat of summer more bearable.

A letter from Carlton Allen stated that he expected to visit his son in Detroit this month (April) and made note of the fact that his son will have been graduated from the Institute 30 years in June.—BURTON G. PHILBRICK, *Secretary-Treasurer*, 18 Ocean Avenue, Salem, Mass.

1903

Notice has been received of the death of Miss H. Anna Kennedy, of Weymouth, Mass., on November 12, 1958. Born August 3, 1875, she attended the Weymouth High School and the (then) Bridgewater Normal School, later taking advanced work in biology at the Institute and at Columbia. She devoted her life to teaching, serving in the Belmont schools for 8 years, then in Quincy 12 years and in Newton for 28 years, besides 6 years in summer school at Hyannis. Highly respected as a science teacher in the Newton High School, she will long be remembered by pupils who later entered M.I.T. Our thanks are extended to Mr. William P. Kennedy of South Weymouth, Mass., for the information which he supplied.

Ike Atwood has returned from a tour of the West Coast. He reports incidentally of having called on Colonel and Mrs. Walter H. Adams in Glendale, Calif., finding them pleasantly situated and in improved health. Clarence Joyce reports a busy and enjoyable winter, having been active in community affairs. Your Secretary was privileged to attend a recent Alumni Council meeting, at which encouraging reports of the growth of the Alumni Fund were presented. Comment was made on the large depletion of the ranks of engineers by transfer to other fields of activity, a depletion that must be offset by stimulating interest in engineering among high school students. This is where our Alumni can be of real service.—LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass. AUGUSTUS H. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass.

1904

You may not see this before Alumni Day, but you may be interested to know that it looks as if there will be 40 or more including wives at our 55th reunion. We hope spring weather will turn some of the "hope to attends" into "plan to attends," in which case we may reach 50.

The only news from the field is a nice letter from Maynard Holcombe as follows: "The Florida get-together was held at Winter Haven on March 16 and 17 at the old Haven Hotel, near Cypress Gardens, the scene of some lovely television broadcasts. Those present the opening day were Al and Ethel Coupe, Lewis and Mary Newell, Guy and Louise Palmer, and Marthe and Maynard Holcombe. We had letters from Rich Sheafe of Apopka and Harry Chapin of Ft. Myers. 'Scattered Showers' prevented the usual outdoors activities and kept those attending well bunched. Your alluring announcement of the places for our 55th reunion was discussed, and you may expect the Palmers and the Holcombes to attend. The Newells are going west and the Coupes north this summer, but all of us agree that the Brae Burn Country Club is a great place for our dinner; and you can print that in big type. We have had a nice season in St. Petersburg — much better weather than last year and plenty to do out of doors. We will be here for another month, and we expect to be back by mid-August as the American Bar Association meets at Miami in late August this year."

Letters like this make our class notes interesting. Let's hear from more of you. — EUGENE H. RUSSELL, JR., *Treasurer and Reunion Chairman*, 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, *President, Acting Secretary, and Reunion Cochairman*, Room 35-304, M.I.T., Cambridge 39, Mass.

1905

Herb Bailey, V, in acknowledging the printing of his Christmas letter in the March issue, says that Ed and Isa Barrier have been in Los Angeles this winter and visited and chatted with him at his home in Ontario. Fred Poole, VI, and his wife, while visiting in Apopka, Fla. have enjoyed the companionship of C. Rich Sheafe '04. Fred and Sheafe grew up together in Harvard, Mass. Fred says the climate in Florida is wonderful "in spite of daily rain and temperatures in the forties and fifties." Thanks for your candor, Fred. Joe Daniels and his wife have apparently returned from their trip to Australia, for recent mail bears their previous Seattle address.

Charlie Smart, II, writes that three hours after he and Mrs. Smart had started out for a vacation in Virginia they had a bad automobile accident, in which Mrs. Smart's hip was badly fractured. Evidently she has made a good recovery, for at the time of writing (middle of April) they were anticipating taking a seven months' delayed vacation. Charlie enclosed a clipping from the *Troy (N.Y.) Record*, telling that his son, Dr. Russell Smart, had been awarded a Fulbright grant to lecture in psychology and child development at Ahmedabad Province of Bombay, India.

Dr. Smart is head of the Department of Child Development and Family Relations at the University of Rhode Island. He and his wife (Mollie Stevens Smart) are authors of several books, the latest being *Living in Families*, a textbook for high school students.

Sidney M. Henry died on March 16, 1959. I quote from a clipping in the *New York Times* of March 17, 1959: "Sidney Morgan Henry of 35 Fifth Avenue, a retired ship line executive, died yesterday at St. Mary's Hospital in Tucson, Ariz., where he was visiting his brother, Colonel James B. Henry. His age was 80.

"In 1939 Mr. Henry retired as general manager for the trustees of the Munson Steamship Line and its affiliated companies. He was a director of the Glens Falls Insurance Company from 1949 to 1958. He was assistant to the deputy chief of the Office of Procurement and Materials of the Navy Department in 1942-43.

"Mr. Henry, born on Staten Island, was graduated from the United States Naval Academy and Massachusetts Institute of Technology. He served in the Spanish-American War and in World War I, resigning from the Navy as a captain in 1920. Assistant to the president and later vice-president of the Balta Dry Docks and Shipbuilding Company, Mr. Henry was also vice-president of the Calvert Navigation Company. Besides his brother, he leaves his wife, the former Katherine E. Crabbs; a son, Sidney M., Jr.; and two grandchildren."

Remember, June 15 is the day, Alumni Day; and instead of having an off-year reunion on the Cape, we're going to rally 50 (?) strong at the Alumni Day luncheon and dinner. Let's keep our record up and start preparation for our 55th in 1960. — FRED W. GOLDTHWAIT, *Secretary-Treasurer*, Box 123, Center Sandwich, N.H. GILBERT S. TOWER, *Assistant Secretary-Treasurer*, 35 North Main Street, Cohasset, Mass.

1906

Did you notice how short the class notes were in the April and May issues? And did you give me a helping hand — with a pen in it? I hope so, for I like to get letters and cards — well, any time and all the time, but especially before June 15 to circulate among the faithful on Alumni Day. That will be history, probably, when you read this; so look for that story in the November number.

In March came a long and interesting letter from Henry Mears, III, who has been enjoying his garden in Tigard, Ore., for the past eight years or more. Henry started with sort of a sermon — that kind of a talk you know, that is intended to help us measure up to our responsibilities: "A long time ago (it was only a little over a month) I received a copy of your letter to Fay. I should have been more prompt in acknowledging it. You will judge from this that I am a poor correspondent. Either because it is hard for me to compose a proper masterpiece, or because I am not as sociable as I should be, the fact is that I have not kept in touch with my classmates. I used to write Bob Hursh, and see him now and then; but that was a

long time ago. Now that I am at the age when nobody needs me *maybe I should begin to get acquainted.*" The italics are mine but what Henry said doesn't ring true — in his case — for he has shown his interest in, and concern for, the Institute all through the years; has regularly attended the meetings of the M.I.T. Club of Portland, and of the American Institute of Mechanical Engineers; so he sees Bill Cady, Bob Cushman, Charlie Willis, Guy Ruggles, and Fay Libbey fairly often. You still get around, Henry, and your typing is well high perfect; try it on Henry Darling way over here up on the Maine coast.

Agnes Coes and I have been corresponding recently. She will stay put in Upper Montclair and is near her two sons, Kent the artist and Vinton the doctor. Stop by when you are in the vicinity. Lobby surely gets around. On his way up from the Fiesta in Mexico City, he tells me, he had a pleasant "session" with Terrell Bartlett, who seemed hale and hearty as usual. Speaking of traveling, Guy Ruggles sent me the March number of *Arizona Progress* — a two-page story, mostly statistics, of Arizona's many advantages and its remarkable growth in recent years. In one of my letters to Guy I had commented on the number of federal and state parks, national monuments, and so forth, and this folder shows that 45 per cent of Arizona land area is federally owned; 27 per cent in federal trust (Indian reservations, I suppose); 14 per cent state owned; and only 14 per cent privately owned. Probably the visitors help with the taxes as the 1958 "tourist business" is estimated at 250 million.

As of April 15 class dues have been received from 11, with course VI still leading with five; course III with three; and one each in I, V, and XIII. Change these addresses in your golden anniversary directory: Walter Davol, VI, to 48 West Clarke Street, Manchester, N.H.; Guy Ruggles, III, to Greene Cananea Copper Company, Naco, Ariz.; Walter Hopkins, III, to 527 Locke Haven Street, Pasadena; Henry Thomson, IV, to 820 North Harwood, Dallas 1; Stanley Martin Udale, II, to 100 Farnsworth Avenue, Detroit 2; and Roger Rice, VII, to 2832 Edgehill Road, Cleveland 18.

Just as these notes are being written comes an Alumni Office notice of the death on October 11, 1957, of Thomas Ely Applegate, II, probably in Hightstown, N.J., where he had always lived. Tom was with us only sophomore and junior years, having entered with a B.S. There is no record of where he obtained his degree, and the only information about him in all the Alumni Registers and on the file card is that his address was Hightstown. MY address is still: EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

A change of address form from the Alumni Association gives a new address for our classmate, Willis Waldo. He has been in Cuba for several years, and my recent letter addressed to him there was returned with "Address unknown." Willis' new address is P.O. Box 1685, West Palm Beach, Fla.

In the *Electronic News* of Monday, March 16, 1959, was an account of seven physicists and engineers who were to receive top honors from the Institute of Radio Engineers at their annual banquet in the Waldorf-Astoria Hotel on March 23. In this list was E. Leon Chaffee, Rumford professor of Physics, emeritus, Harvard University, Cambridge, Mass. He was to receive the I.R.E. Medal of Honor for "outstanding research contributions in radio engineering." Many of the men will remember Leon, who came from Somerville, Mass., and took Course VI, Electrical Engineering.

A note from Seymour J. Egan, from Wakefield, Mass., tells of the death of the widow of Conrad Youngerman. Conrad took four years with 1907 in Course IV but was graduated with 1908. He was killed in a railroad accident in 1912. Some of the Class possibly may recall him.

Don Robbins very thoughtfully sent me several clippings noting the sudden death on April 6 of our classmate, Frederick T. Moses, who was a prominent insurance executive in Providence. Fred came from Ayer, Mass., and took Course V, Chemistry, and served the four years he was at Tech as president of the Chemical Society. He joined the Firemen's Mutual Insurance Company of Providence in 1911 and was rapidly promoted from assistant secretary to vice-president and engineer, and then to president of the firm and to the presidency of Union Mutual. At the time of his death he was chairman of the board of the Firemen's Mutual Insurance Co. and of the Union Mutual Fire Insurance Co. He was president of the Appalachian Insurance Co. and a director of the Industrial National Bank, the Protection Mutual Insurance Co., and Textron, Inc.

His chief charitable interest was humane work. He was president of the Rhode Island Humane Education Society and honorary vice-president of the American Humane Association.

Fred leaves his wife, S. Ruth Moses, and a son, Harlan Taft Moses, who has succeeded his father as president of Firemen's Mutual and Union Mutual. There are three grandchildren. Funeral services were held at the Central Congregational Church on Angell Street, with burial in Swan Point Cemetery. — PHIL WALKER, *Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

Wouldn't you like a week end on the Cape? Then come to our 51st reunion, June 12 to 14, at the Melrose Inn, Harwichport, Mass., on the Cape. Ladies are invited. Early replies (April 15) indicate a good turnout. Why not join us for a really good time?

Don't forget to remember the Alumni Fund. It's not too late to chip in and help increase our percentage of donors.

Jimmie Burch wrote from Hollywood, Fla., March 28: "Leaving here Monday after a few weeks away from the snow and ice. Marie's Olds is less than a year old and had only 1,400 miles on it, so I drove it down to break it in. Passed through Rome, Ga., but could not locate Carl Bangs in the telephone book. I had better luck with C. O. Brown in Fort

Lauderdale and had a nice visit with him over the phone.

"It rained the entire trip down here, but that was better than what we had in Dubuque. We have relatives and quite a number of acquaintances in the Miami district, so we are kept fairly busy. The view on the post card could have been taken from our hotel window, as it is just what I am looking at now. We are both looking forward to a few days on the Cape in June and hope for a good attendance."

Carl Bangs wrote from Rome, Ga., April 7: "I'm just getting around to returning your memo slip regarding the 51st reunion. Sorry to report that I shall not be able to attend. Expect to be in the New England area during July and will probably be at Harwichport for a few days; so may run across a few of the fellows who are located on the Cape in the summer-time."

"I have been on the retired list now since January 1, 1954, and have enjoyed every minute. It beats all how busy one can be doing 'nothing.' I haven't done any productive or creative work, but I am having a lot of fun doing the simplest things. The days are still too short."

"For relaxation I prowls all over the southeast area. Florida and so forth, to the tune of 23,000 miles or so a year; but I never seem to cross trails of other '08 fellows. I would like to drop in on one of the monthly winter dinners and swap 'lies' with the fellows there. So remember me to those who report at the 51st and give them my best wishes."

Johnny Johnson wrote from P.O. Box 4085, Fort Worth, Texas, early in April: "I am no longer division engineer. I retired January 1, 1959 after 51 years of trying to leave monuments of my civil engineering labors, which were many. Being a native of Texas, I'm choosing this location for disposing of my accumulated competence. It was beyond my fondest dream that I should be able to do this, since during my professional life I accomplished two desires — doing a competent job and having a really good time. I still do."

Charlie Steese has a new address; the Molly Pitcher Hotel, Carlisle, Pa. He wrote: "Mrs. Steese and I are planning to arrive on the Cape Friday morning, June 12, and perhaps stay on the Cape for a time afterwards without going to Boston for the Monday Alumni Day. Then perhaps we'll go west across Canada as far as Vancouver before returning to Carlisle."

Roy Heilman wrote from Berkeley, Calif., on March 23: "Noticing how your March Technology Review column of our Class mentioned several classmates suggested writing down this note. On March 8, Lee Warren, VI, and his wife, en route to Hawaii, and Roy Heilman, II and his wife were guests of VanCourt Warren, III, '10 and Mrs. Warren for dinner and the evening to talk over our M.I.T. experiences and friends. It had been years since these friends had seen each other, but how vivid and pleasant were our shared M.I.T. memories. My regards to 1908 men who read this."

Henry Sewell recently sent me a copy of a very interesting brochure marking the 125th anniversary of the South Scituate

Savings Bank, of which Henry is vice-president and trustee. H.A.S.N.?—H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

A dinner meeting of the Fiftieth anniversary committee was held Tuesday evening, April 7, at the M.I.T. Faculty Club. Those present were Chairman Francis Loud, VI; Secretary John Davis, II; George Wallis, II; Henry Spencer, II; and the class Secretary. Also present on invitation of Francis were John Willard, II, and Gardiner Perry, VI. The class Secretary reported that well over \$400 had been contributed and that the balance of the class funds in the North Avenue Savings Bank is now about \$750. John Davis reported that of the 250 letters with questionnaires mailed November 8, 83 replies have been received in which 57 class members indicated that they planned or hoped to be present. A list of these members is to be sent with the next letter which will be mailed shortly. Francis submitted a draft of this letter, which he had prepared, for suggestions from those present. In the next questionnaire there will be more specific questions as to the members of the family who expect to attend, reservations desired at Snow Inn, transportation, and so forth. It was also voted to send invitations to the widows of the class members. Francis announced that he had confirmed that Van Bush '16 would be the speaker at the banquet Saturday evening, June 13. George Wallis reported that he and Marcia had just returned from their trip to Florida and that they had met Howard, II, and Caroline Fisher there.

The class Secretary and Muriel are planning to fly to Spain June 17, two days after Alumni Day. He is a chairman and delegate at the meeting of the International Electrotechnical Commission which is being held in Madrid. They attended the meeting of this same commission in Moscow two years ago. Phil Chase, VI, will also be attending the meeting.

It was a real shock to us to learn of the death of John Nickerson, II. His wife Alice sent us a note as follows: "I'm very sorry to have to tell you that John passed away suddenly on March 23. He was active to the last. We'll all miss him, but he left us the principles he lived by. I'm glad he had the enjoyment of your friendship and that of his other classmates."

John Willard, with whose firm John at one time was employed, kept in close touch with him and has written the following tribute. "John Winslow Nickerson, II, died suddenly of a heart attack on March 23 at his home in East Lyme, Conn. After teaching a year at M.I.T., John became one of the original associates of Henry L. Gantt in the historic pioneering work on wage incentives at Saylesville Bleacheries, a circumstance that led him to a lifetime career of management engineering. He was with Cheney Brothers, silk manufacturers, for 27 years, being recognized while there as an expert on labor standards in the textile industry. This was responsible for his appointment to the Textile Work Assignment Board in

1934. He held other posts in the Roosevelt administration, being director of the Management Consulting Division of the War Production Board from 1942 to 1945. This was followed by work for Bigelow, Kent, Willard, and Company, consulting engineers. After retirement age John did independent consulting. In 1951 he acted as chairman of the advisory group on European productivity for the Mutual Security Agency. In all these varying assignments John was characterized not only by his ability but by complete honesty of purpose. It was this integrity that gained him the stature he acquired in the settlement of labor disputes. Johnny Nick is well remembered as a quite regular attendee at our class reunions and had signified his intention of attending our 50th. He is survived by his widow, the former Alice Robinson; two daughters, Miss Eleanor Nickerson of Hartford and Mrs. Barbara N. Gilbert of Manchester; and two grandchildren."

This Review should arrive at least a week preceding the reunion. We hope to see a large number present. Even if you have not been able to state definitely that you are coming, do come to Snow Inn if circumstances make it possible; we'll take care of you.—CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. GEORGE E. WALLIS, *Assistant Secretary*, 185 Main Street, Wenham, Mass.

1910

It is with sorrow that I announce the death of Charles A. Callahan on February 15, 1959. He was born in Waltham and was a graduate of Waltham High School. He was a textile chemist and was employed by the federal government.

Carroll Benton's monthly report of the New York City 1910 luncheon follows: "Not much news this time except to report on the luncheon held last Wednesday (March 18) at the M.I.T. Club. There were present the following fellows (most of whom show up regularly from month to month): Henry Schleicher, Gordon Holbrook, Larry Hemmenway, George Magee, Jim Tripp, Fred Dewey, Harold Akerly, Van Tuyl Bien, and your Correspondent. Bien, who is an architect in Washington, D.C., was in town on business, and we were delighted to have him join us for lunch. Next month I expect to be away on a motor trip through the South — so I won't be able to send you any notes of the April meeting at that time. Perhaps I can combine them with the May notes."

Occasionally your Secretary receives a pleasant surprise, and this happened when he received a letter from Allen Gould. I do hope I may have similar surprises from other members of the Class in the future. Allen has evidently taken a trip somewhere, as his letter was written on Canadian Pacific, Empress of England stationery and follows: "After 14 days of relaxation I have had time to catch up with things — including my sins of omission. One of my chief sins is failure to write my class secretary over the years — in spite of reminders. So I will at least get off a short note now. Maybe I have an alibi in that I am the only 1910 man near

Cleveland, except Jack Tuttle in Akron. I had lunch just before sailing with my old Course VI laboratory mate Lew Southwick. He is not officially retired yet but manages to spend most of his time at Shelter Island and not get to town too often. Last October Van Court Warren passed through Cleveland on a grand tour from his California home, and I had him and his wife for lunch. They were en route to New York State to visit one of his married daughters and grandchildren, then a leisurely drive back through the South and Southwest. Van retired a few years ago as colonel of engineers after an interesting career in World War II. He practiced his mining engineering training for several years after graduation until World War I. I had not seen him since graduation. Looked almost the same except for a few grey hairs. Remarkably well preserved after 48 years!

"Those above three classmates are my only recent contacts. However, I hear indirectly from Andy Fabens through his two sons living in Cleveland — both M.I.T. and both active in the Tech activities here. Andy has been pretty much retired for a number of years with his base at Delray Beach, Fla. Last I heard he was about to take off on a Caribbean cruise. I have had a little correspondence with Jack Babcock in connection with the class contribution to the Alumni Fund. The 50th anniversary is almost upon us, and I hope Jack can get the contributions rolling in better in the time remaining. I hope to get in our usual summer visit in Edgartown or Maine this summer and if so will give you a ring again and see if we can team up for lunch."

Ernest Patch's brother sent me a clipping from the *Vallejo Times Herald* about Ernest's activities in behalf of the Crippled Children Society since his retirement from the U.S. Navy. Excerpts of this article follow: "Members of the board of directors of the Crippled Children Society of Solano County paid special tribute to Captain Ernest L. Patch, U.S. Navy (retired), this week as the 25th annual Easter Seal sale opened in Solano County and across the nation. The tribute is in recognition of 10 years of volunteer service as a confidential case worker for the society. During this time Captain Patch has personally investigated and handled hundreds of special cases involving crippling conditions of children and young adults where Easter Seals have helped to bring relief, comfort, new hope, and happiness to the handicapped."

"Asked how he happened to choose this type of community service, Captain Patch said: 'It chose me actually. I became a member of the board of directors of the Crippled Children Society in June, 1949, after my neighbor, Mrs. Mary Bedford Hilton, knowing that I had recently retired from active service in the Navy and should have a little free time on my hands, urged me to attend a couple of the society meetings. That did it. Before I realized what a tremendous responsibility I was accepting I agreed to relieve, for a short time, the case worker, Mrs. Hughes, who was leaving Vallejo. That was in the fall of 1949; and now, in 1959, I can truthfully say that Easter Seals and the services their sale is able to provide have been an

absorbing and important part of my life, and an experience that has brought many rewards of satisfaction to me as I have helped to direct the flow of contributed funds where they would do the most good.' " — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

1911

At the March meeting of the Alumni Council the following resolutions on Dennie were presented by Don Stevens, who made a trip to Cambridge for the purpose.

"Be It Resolved: That we hereby pay tribute to Orville Boardman Denison, by whose death on February 13, 1959, the Institute lost one of its most beloved members."

"Dennie, as he was affectionately known in the Institute, church, trade, and social circles, was born in Framingham on October 5, 1890. He was graduated from Framingham Academy and went on to M.I.T. Although his degree was in Electrical Engineering, his real profession was service. Even in his undergraduate days he was active in nearly all student activities and was one of the three class marshals at graduation."

"He was lifetime secretary of the Class of 1911 and in the 47 years of his service never once failed to provide notes for each issue of *The Review* — notes which were not only of interest to his classmates but which were envied by other classes."

"For 12 years after graduation he was in engineering work with the American Steel and Wire Company and the Simplex Wire and Cable Company. For five years he was executive secretary of the M.I.T. Alumni Association. Subsequently he was manager of the publicity bureau of the Worcester Chamber of Commerce, Secretary of the Gardner Chamber of Commerce, and up to the time of his retirement was executive director of the Framingham Chamber of Commerce."

"Those who have attended the annual Alumni banquets are aware of his skill as a piano player and song and cheerleader, as are his fellow Rotary Club members throughout New England."

"In Gardner he was vestryman of St. Paul's Episcopal Church and in Framingham he was senior warden of St. Andrew's Episcopal Church."

"During his long and active career he has been class representative on the M.I.T. Alumni Council, founder and secretary of the Worcester County M.I.T. Alumni Association, secretary of the New England Association of Beta Theta Pi, president of the Boston Theta Club, president of the M.I.T. Alumni Association of Western Maine, president of the Massachusetts Association of Commercial Executives, and president of the Gardner Rotary Club."

"As members of the Alumni Council, we join in sincere tribute to his memory, in appreciation of his years of effort in behalf of M.I.T. and in the expression of our deep sympathy to his widow, Sara; his daughter, Mrs. Helen Barton; his sons, Orville, Jr., and George; and the members of their families."

"Be it further resolved: That this resolution be spread upon the records of the Alumni Council and that a copy thereof be transmitted to his family."

These resolutions were accepted by the Council by a standing, silent vote. In his letter of transmittal, Secretary Don Severance expressed the sympathy of the Alumni to Sara and told her of the comment of the Alumni who attended the church service in Framingham on the fine service and warmth and appropriateness of every part of it — especially the tribute to Dennie.

Ina MacPherson sent a note to us telling of a visit of the Denison family to Framingham for the committal service on April 11. They were guests of Ina and Roy while in Framingham.

One of the first reactions to the news of 1911's loss came from A. T. Cushing, I. Allston wrote in part: "I am practically retired now but am always ready to take a job if someone wants to use my experience and is willing to pay for it. Before going to M.I.T. I graduated from the University of New Brunswick, Canada, in 1909, and am planning to go there in May for our 50th anniversary celebration. May stop in Boston on the way and call the Alumni Office."

Maurice Lowenberg, VI, and his wife, while on their trip to the Orient which began in February and was to take them 20,000 miles by plane and 8,000 by boat, sent a picture post card of Hong Kong harbor to Cornish. The message: "This is one of the most beautiful harbors in the world, especially at night. Trip so far has been interesting, exciting, and educational. Hawaii, Manila, Singapore, Ceylon, Thailand, India, and now Hong Kong. Next Japan and U.S.A."

A picture in the personalities section of the magazine the *Rotarian* shows Mark Kinney, IV, supervising his son Mark, Jr. (Yale '50), hanging a sign advertising Red Cross Day. The legend: "Red Cross Day at the J. S. Ringwalt department store in Mount Vernon, Ohio, means that all cash sales that day would go to help flood victims in the area. Making sure people know of the offer are Rotarians Mark Kinney, store president, and his father, M. Curtis Kinney, board chairman of Ringwalt's. People responded: \$2,948 worth!"

An unusually fine five-by-seven inch halftone illustration from a Worcester, Mass., newspaper depicts a group of four leaders for the Worcester Y.M.C.A.'s modernization fund campaign. Included is F. Harold Daniels, VI, honorary chairman.

The eighth edition of *Sewerage and Sewage Treatment*, by Harold E. Babbitt, XI, and E. Robert Baumann, is reviewed in the March 13 issue of *Science* by a member of the Department of Civil and Sanitary Engineering, M.I.T. He writes that a number of changes are evident in this latest edition of a book which has served sanitary engineering well since 1922. Harold is a professor in the Civil Engineering Department, University of Missouri.

We have to announce the passing of another classmate, Louis L. Wetmore, IV. The *Boston Herald* of March 30 published the following obituary: "Louis Leavitt Wetmore, architect, of 132 Beacon Street, passed on yesterday at his home. He was 74. Born in St. John, New Brunswick, he was brought up in Boston, was a member of the M.I.T. Class of 1911, and later

helped design some of the M.I.T. buildings. He had his own firm in New York for many years and returned in 1944 to Boston, where he joined the firm of Thomas James and Company. He was a member of the Mother Church, First Church of Christ Scientist. Mr. Wetmore leaves his wife, Mrs. Laura (Bemis) Wetmore: a daughter, Mrs. Jane Anderson of Salem, N.Y.; two sons, Richard of Boston and Louis B. of Urbana, Ill.; and a brother, Charles of Needham." Only a few months ago we had a change of address for Louis when he moved from Needham to Boston.

For a follow-up on Olin V. Chamberlin, II, whose death was reported last month, we have some information from his wife Margaret. Olin was commissioned a lieutenant in Ordnance in 1917 and served overseas. He was not well when he returned home, and ill health was his lot for the remainder of his life. He entered the Veteran's Hospital, Oakland, Pa., on December 16, 1958, and was operated on for diverticulitis on January 6. For a day or two all seemed well, but he did not have sufficient strength when pneumonia developed. Funeral services were held on January 22. He was cremated and interred in the Washington Cemetery. Olin spent two years at Washington and Jefferson before coming to M.I.T. Margaret says the years at Tech were the happiest of his life. Responding to "a voice from the place he loved so well," she paid him a touching tribute as a husband and father. Olin was retired from the Marion Machine, Foundry, and Supply Company for a number of years because of his ill health. He was a lifelong resident of Washington, Pa. Surviving are his wife, Margaret McWilliams Chamberlin; four daughters, Mrs. Margaret Maxwell of Leechburg, Mrs. Marian Stockdale of Bethel Park, Mrs. Nancy Hagen of Cleveland, Ohio, Mrs. Lois Zehner of Titusville; and two sons, Lieutenant Commander W. B. Chamberlin, U.S. Navy, Rhode Island, and Philip M. Chamberlin, U.S. Naval Reserve, New Orleans, La.; also 13 grandchildren.

The following address changes have been received: Charles B. Magrath, II, 199 Birch Street, Winnetka, Ill.; Charles L. Bartlett, II, 128 James River Drive, Newport News, Va.; Norman Duffett, X, 909 James Avenue, Niagara Falls, N.Y.; and Alec W. Yereance, I, 3403 South Stafford Street, Arlington, Va. Alec also has a new summer address on Cape Cod. The mail address is 27 Old Wharf Road, Harwichport, Mass., although he says the location is actually South Harwich. — ORVILLE B. DENISON, *Secretary*, 1909-1959. JOHN A. HERLIHY, *Acting Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Word has just been received of the death of William F. McKnight of 591 Middle Street, Fall River, Mass. We hope to be able to give you further news of his recent activities at a later date.

William S. Wolfe, who recently retired as manager of domestic plants of Good-year Tire and Rubber, has made his home at 1184 6th Avenue, Northwest Delray Beach, Fla.

Jerome C. Hunsaker, retiring President of the Institute of Aeronautical Sciences, has had an honorary fellowship conferred upon him by that body.

Percy W. Hodges, V, writes that since his retirement in 1950 he has been living at Route 8, Box 957, Tucson, Ariz. Percy graduated from Boston University and took special courses in chemistry with us at M.I.T. He was chief chemist of Colonial Shippers Company in Cuba for 12 years, then operated the Arizona Sunshine School for 20 years as its owner in Tucson. Since retiring he has interested himself in traffic safety and controls, and he also dabbles in real estate. He spent his summers on the Oregon coast and admits to having married the Best Peach that ever came out of Georgia.

With the 1958-59 Alumni Fund year closing in June, may I ask that everyone who has not contributed make an effort to send at least a small contribution. Our percentage of contributors is running under 50 per cent, and it would only take a few more small contributions to place us within the 10 highest classes. Don't put this off. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N. Y.

1913

The baseball season has started again and the Yankees are out ahead of our Red Sox. The latest news from Vandenberg Air Force Base, Calif., assures us that a man-made moon has been successfully launched. Now we shall orbit, or better narrate, for the benefit of our readers.

An interesting clipping has been received from the *Salem News*: "One of the unsung sports figures hereabouts is Albert (Bert) Conant of 237 Maple Street, Danvers. . . . It was the custom at the Salem Y.M.C.A. to emblazon the walls of the gym with the names of holders of records in various events. . . . Under the 220-yard sprint the name Bert Conant stood for 25 years! Retired from the New England Telephone and Telegraph Company as a widely respected engineer, the M.I.T. graduate enjoys his hobby of amateur radio. . . . Among his friends, 'Speedy Bert' is known as the 'Sheriff of Woodchuck Hollow.'" Good going, Bert.

George Richter has made the headlines, according to the *Holyoke Transcript-Telegram*, and we quote: "It was a Holyoke native, George Richter, who was one of two lads who completed the four years' course at Holyoke High School in three years, back in the first decade of the present century, and who went on to attain high places in the field of industrial chemistry; who first dreamed of broadening the supply of pulp for paper-making to include the hardwoods as well as conifers. After graduation from M.I.T., Mr. Richter went with the Brown Paper Company in Berlin, N.H., and it was there that he took up the long, long task to make his dream come true." So after 40 years the Black and Clawson Company, one of the leading manufacturers of pulp and paper mill equipment, has announced that a new system has been developed for continuous pulping of hardwood chips

by the cold soda process. This accomplishment was performed at the Brown Company mill, where our boy George started his experiments many years ago.

We have received a post card from Dave Nason, from Barbados, British West Indies. Our guess is that the barracuda family was in trouble when our number one fisherman cast off. The pictures and tales will be larger and better.

Another of our boys has joined the "unemployed." On February 25, 1959, Edward T. Dobbyn, Sr., 79 Monroe Road, Quincy, retired as chief naval architect for the Navy Department at Fore River Shipyard after 47 years of government service. Ed was educated at Tufts College and M.I.T. He was "loaned" by the Navy to the Ford Motor Company for the construction of Eagle boats. Because of his design and construction involving 2,900 and 1,100 Naval vessels in World War II and the Korean War respectively, he was given a special Navy award of merit. During his many years of service, Dobbyn was associated with most of the ship-building yards in and around Boston. During World War II his two sons were officers in the Navy and his daughter served as a lieutenant in the Waves. Ed spent many years as an instructor of naval architecture at Franklin Institute in the evening school, and besides he found time to graduate from Suffolk Law School and is an attorney at law. Well done, Ed.

Again, another pal makes the headlines. John H. Hession, 228 Slade Street, Belmont, Mass., was chosen by the Massachusetts Professional Engineers as a member in charge of plans, events, and functions of the Massachusetts Engineers' Convention in February. John received his bachelor's degree in 1913 at M.I.T. and the following year was honored with his master's degree. As president of the National Gunitite Corporation, he has specialized in waterproofing and prestressed concrete structures such as bridges, buildings, and large tanks. Hession is a fellow of the American Society of Civil Engineers and a member of several associations and clubs, including the Boston Society of Civil Engineers, the Boston Rotary Club, the Catholic Alumni Sodality of Boston, and the First Friday Club. John's family consists of his dear wife Anne; a daughter, Ann H. McGivern; and six grandchildren. Bravo, John.

Now comes the saddest part of our reportings; thanks to Larry Hart, Henie Glidden, Alec Yereance '11, and Gil Pardey, we regret to announce the deaths of two of our most loyal classmates. On Friday, March 13, 1959, Kenneth Franzheim passed away in Mexico City; he was buried March 16th in Houston, Texas. Our Class has lost one of the most successful friends and buddies. Dutch, as we all knew him, was one of the outstanding architects in the country. After he graduated from M.I.T. in 1913, his designs and architectural monuments were legion: in Chicago; New York; Washington; Albany, N.Y.; Virginia; Fort Worth, Texas; Houston, Texas; and Mexico City and the vicinity. Either co-ordinating with other prominent architects or with his own organization, Ken was responsible for the design and construction of many large buildings or projects. To mention a few:

Guild Theatre, New York City; the Fox Motion Picture House in Brooklyn; De Witt Clinton Hotel in Albany; City Auditorium and Gulf Building, as well as Foley's department store, all in Houston. Further, he was commissioned by several aviation concerns to design airports in 15 cities including Philadelphia, Pittsburgh, Harrisburg, St. Louis, Cleveland, Baltimore, Houston, and several in metropolitan New York. He was honored at many times by the American Institute of Architects, Allied Arts Association, Sociedad de Arquitectos Mexicanos, the National Sculpture Society, and the Educational Council of the Institute. Dutch is survived by his widow; son, Kenneth, 2d; daughters, Mrs. Myrlyn McCullar of New Orleans and Mrs. Rudolph Reese of Switzerland; a brother; and seven grandchildren. The Class of 1913 extends its heartfelt sympathy to the Franzheim family in their hours of sadness, and we are all proud of the many accomplishments of our departed brother.

Again with a heavy heart, we announce the death of another loyal and steadfast classmate and friend, Charles Warren Gotherman, who died March 25, 1959, after a rather long illness. Death was caused by a weakened heart brought on by a severe asthmatic condition. We have known of Warren's various illnesses over the past few years, but in spite of his condition he has been an active participant in class affairs and reunions, accompanied by his charming wife, Virginia. Yes, we shall miss Warren.

Gil Pardey reports that he and his dear wife, Florette, are in excellent health and enjoying life in general, with one daughter holding a responsible position in the nursing department at the New York Hospital and a second daughter married in Atlanta with two children. Even in retirement, Gil is against it. He sends his very best to all of the other classmates and will see us in 1963. Why not in 1961? Well, we are always cheered by one of our most dutiful correspondents, Allen Brewer. The joint epistle received from Allen and Maurine a few weeks ago related briefly their trip or voyage to Jamaica; Ciudad Trujillo; Puerto Rico; and St. Thomas. Again, in April they attended the annual meeting at Buffalo of the American Society of Lubrication. Following their return to Jensen Beach, they will visit New York City on both pleasure and business. Allen has started the authorship of several chapters of McGraw-Hill Book Company's new handbook on lubrication. They returned to their most attractive home in Florida the last of April to allow his brother, Gordon, and pals to make a tour to Mexico. The Capen family enjoyed their visit at Jensen Beach and are looking forward to a long desired session with the Brewers in Canton.

In passing, we must express our regret at termination of B. Dudley as the editor of *The Technology Review*. He has been so co-operative with all secretaries, but we wish him much success as assistant to the director of the M.I.T. Lincoln Laboratory. What a shock it was to learn of the passing away of our old friend Orville Denison, the class secretary of 1911. His example of writing notes for every issue of *The Technology Review* since his grad-

uation is an inspiration for us all. Dennie's record as a class secretary and a loyal Tech man may be equaled, but will never be surpassed.

During the middle of March, the Thompsons and the Capens joined the Mattsons in a going away party with a dinner at the "Chief" in Newton and an enjoyable evening at Bill's home. We shall miss them both as hosts and workers of our class affairs. So come back home and often, Joe and Bill. In the latter part of March Bill Brewster, Chas Thompson, Bill Mattson, and your Scribe met for lunch at the Union Club. The question of the special donation from the Class of 1913 to the Alumni Fund in 1963 together with tentative plans for an interim reunion in 1961 was discussed. You will all be advised regarding the Fund later from Bill Mattson or his lieutenants. Although it was voted at our 45th reunion to hold an interim reunion on campus, we have been informed that the facilities at Tech are always reserved for the class celebrating their 25th reunion. It has been suggested that in selecting a site for 1961 your Committee should investigate the possibility of reuniting at one of the several motels close to Cambridge, probably bordering one of our new super highways.

The writer was the guest of our representative R. Charles Thompson at the last council meeting at the Faculty Club in Cambridge. These council meetings are very educational and develop wonderful comradeship among all the classes but also keep our representative and president cognizant of the plans and accomplishments of our alma mater. So, all sistern and brethren, endeth the text for now. Keep us informed of your or other classmates' activities. You write 'em, we'll publish 'em. See you on Alumni Day. — GEORGE PHILIP CAPEN, *Secretary*, also *Treasurer*, 60 Everett Street, Canton, Mass.

1914

This issue of *The Technology Review* will be in your hands just about the time our 45th reunion is being held. It would have been great to have every classmate there, but for the many obvious reasons this is an impossibility. It is also a long gap between now and the first fall — November — issue, when the reunion will be reported; but we will try to tell you about it then. The best plan is for you to attend the reunion yourself. Come at the last minute and you can be tucked in somewhere.

Word has just been received that General Alden Waitt, retired, is planning to fly up from San Antonio to be with us at the reunion. Alden has been very busy as a president of the Alamo District Science Fair. There were approximately 300 high school entries coming from 34 counties of the southern section of Texas. Alden at the same time was general chairman of the southwestern regional meeting of the American Chemical Society. Now he is back at his painting. In this field he is a real competitor of Messrs. Churchill and Eisenhower, as is evidenced by several awards he has received for his paintings.

Harold Bent, the retired Vice-president of the Newport News Shipbuilding and Dry Dock Company, had previously writ-

ten that if his wife's health permitted he would be at the reunion. Unfortunately word has just arrived from him that his wife died on March 18. His son, who is located in Teheran, flew back to see his mother just before her death. Harold later flew to Teheran with his son to stay a while with him and his family and will not return until July. Another traveler who will miss the reunion is Walter Keith. At the reunion time Walt and his wife will be en route to Europe. They are taking their eldest granddaughter with them. Walt, Jr., is a member of the Class of 1941 and is associated with his father in Akron.

Arthur Shepard expects to be with us. He, too, has suffered the loss of his wife after a long illness. As his two daughters have married, Art has sold his home on Long Island and moved to a small home near Poughkeepsie, N.Y., where he will make his home after his retirement later this year.

Two other regular reunion attendants of the past have written that they expect to be with us. One is George Whitwell, who has retired as vice-president of the Philadelphia Electric Company; and the other is Art Peaslee, the still very active building contractor of Hartford, Conn. Howard Borden, who was uncertain of his ability to attend, has also written "I'll be there." The location of the reunion spot is so central that several of the others who had expressed hope but were doubtful because of their own or family illness, will find it possible to attend for the Saturday night dinner at least.

It is with deep regret that the death of another classmate must be recorded. Harold Lee Harlow died on March 23, 1959. Harlow had been associated for many years with Jackson and Moreland of Boston. He had recently retired and suffered a long illness. Harlow prepared at the Malden, Mass., High School. His wife, the former Minnie E. Scott, and his two daughters and one son survive him. During World War I Harlow served with the infantry. — C. P. FISKE, *President*, Cold Spring Farm, Bath, Maine. H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, R.F.D. #2, Oakland, Maine.

1915

What a Class! Up to now 32 per cent of our class mailing list has paid an average of \$6.90 per man for class dues. Many thanks, many blessings to you all for your prompt and generous spirit. To those others who have overlooked this, just a gentle reminder — catch on?

The M.I.T. Club of New York is the largest and most active M.I.T. Alumni group in our country. It provides private club facilities for business or social meeting when you are in New York, with a chance for hotel reservation service when rooms there are tight. For Alumni outside New York City, the dues are only \$12.50 annually. Looks like a good buy for classmates going to New York. They have a monthly class luncheon where you can renew old friendships.

In the November issue of *The Review* our column will carry the story of our annual Class cocktail party on Alumni

Day. I do hope we'll see a lot of you with your families and guests at this gala get-together for 1915. Al Sampson and Barbara Thomas, as usual, are our cocktail party committee.

There have been so many splendid and interesting letters with class dues, that I'll give them to you alphabetically. Allen Abrams: "My work with A. D. Little, Inc., has kept me busy, including a month's papermaking trip to Brazil, Peru, Colombia, and Puerto Rico — otherwise my activities are in the U.S." At the annual meeting of the American Institute of Electrical Engineers on June 22 in Seattle, Phil Alger will be presented with the LAMNE Medal for 1958 with the following citation: "In recognition of his contribution to the arts and sciences of design and application of rotating electrical machines." Congratulations, Phil.

Dick Bailey (one of our few remaining bachelors and, boasting 70 years of age, this is a feat): "Just because I am about six weeks late in responding to your letter requesting my class dues, do not think that I am not interested. Because I am, and I spend more than 11 months every year looking forward to the New York City class get-together: Yes, Azel, 70 years is only the calendar record of my age. I don't feel it; and at times someone says to me, 'Why don't you act your age?' Do they want me to put on an act? The day after our class meeting at the Chemists' Club I went out to Charles (Speed) Williams' home in Riverdale and spent four or five hours with him. As you know he had a slight heart attack in Boston about Thanksgiving and spent about three weeks in a hospital in Boston. Because of this his doctor has advised him to be cautious, though not stationary. So he thought it better not to attend the dinner, though he told me he missed seeing all the fellows, particularly you and 'Pirate' Rooney. He is in good shape and gets around, goes into New York once in a while with his wife, and is active in Amherst activities. No cause to worry there, except that I am a graduate of Williams. Next May, Amherst and Williams play baseball, celebrating 100 years of baseball between them — the oldest continuous intercollegiate baseball series. Why should I deviate from M.I.T. life to the Little League life? Only because I love both of them. Thank you for your note in the letter to me. And happy Easter!"

Doug Baker, from retirement on his big farm at East Middlebury, Vt.: "Your soft sell plus the inducement of a postage prepaid reply envelope is hard to resist, so here is my modest contribution to the class dues fund. There is nothing much to report from this outpost. The number of grandchildren appears to have leveled off at seven, most of whom we hope to see at one time or another during our busy summer months. My spare time project for the next year or so is the remodeling of our woodshed into an overflow bedroom with, eventually, an annexed small kitchen and bath to form an apartment for summer use. One plan for its use is that Elizabeth and I could occupy it when the house is full of grandchildren, coming back into the house after the breakfast dishes are done. I am still trying to figure out whether there is any way of

converting hay that cannot be sold for the cost of the lime put back into the soil, to say nothing of fertilizer, into a more profitable product — a way, that is, which would not be more work that it would be worth. The only new plant investment this past year was a light chain saw and a pair of snowshoes. The latter have been used for pleasure but not of necessity this winter, as we have not been snowed in so deeply that we could not be plowed out. Town meeting day has come and gone, and by rights I should be transferring soil put aside last fall into some flats and getting seeds started; but there is something about the snow falling outside my window that puts me off, even though the seeds will be started indoors. Of course it is only a flurry, but up here a snow flurry means anything less than four inches. A foot of snow is not three flurries, however, unless there have been periods of sunshine mixed in. Warm regards and best wishes."

Hen Berg in San Francisco (too bad he and Carl Dunn did not connect out there): "I heard from Phil Alger, Henry Daley, Carl Dunn, and yourself at Christmas time, so that has been the limit of word about '15 classmates. Hoping to make it for reunion in '60 — the Lord willing. Carl Dunn wrote he was making a world trip and would be in San Francisco December 30, and get in touch, but I didn't get any word from him at that time." Frank Buckley has sold his storage warehouse business in Boston and retired to a quiet life of gardening and traveling.

A fine travelogue from Evers Burtner, who is now back at M.I.T. for this second term: "With retirement at Tech last June, but engagement as lecturer on a half-time basis, I requested and was granted leave during the first term, September, 1958, through January, 1959. Late in September, Mary and I drove to Los Angeles, stopping one day each at Salt Lake City, Bryce Canyon and Zion National Park. A fancy uniformed Indiana state cop insisted on 'investigating us' by driving very close to our bumper just as in the darkness we approached a red blinker light. Confused by his actions, on a strange road not greatly traveled at that hour, I drove through the light, was hauled up short and fined \$16 by a justice of the peace at his front-room-residence-office located a minute's walk away; very convenient, but a bit painful considering the conditions. After taking an apartment for one month at Redondo Beach, within four miles of our daughter and family, we drove to San Francisco via the picturesque San Simeon Highway to board the *S.S. Leilani* for Honolulu.

"At Waikiki Beach (three miles from Honolulu) we stayed at a small, homelike, apartment-type hotel fronting on a beautiful tropical garden near the hotel's private pool and the yacht harbor. The scenery, climate, and kindly courtesy of the people will always be remembered by us. Also the thrill of a catamaran sail, Woody Brown skipper, designer, and owner (only one other boat was out); and at another time coasting ahead of the waves in a large outrigger canoe right in front of the Surf Hotel. In addition, we boarded a plane for Hilo, on the large island of Hawaii, took a U-drive car and

drove through volcano and lava flow districts to Kona, entering Kona just in time to be welcomed by the daily half-hour playing of the chimes on the Congregational Church, the first established in the Islands. It seemed a miracle to see Kona coffee plants growing through rock lava. Completing the circle of this large island, we passed by some desert areas with cactus, a large ranch, and along the prosperous northeast coast, sugar cane fields, settlements, sugar mills, and water falls. We were very fortunate in getting the *S.S. Lurline* from Hilo to Honolulu. After several days there, we boarded the *S.S. Leilani* for the homebound voyage to San Francisco, arriving December 2. Loring Schutz³⁸ kindly met us, gave some fine tourist advice, and even loaned his car. During our voyages it was pleasant on deck, many kinds of deck sports and entertainment were available. Mary even learned some hula steps. I regret the *Leilani* has been withdrawn from this service run, but passage is available by Matson passenger ships. So many of our Class have reached the retirement period, we should remember that the weather in the tropics, Hawaii, and the Mediterranean is pleasant in spring, fall, and even much of the wintertime, periods when ship, plane passage, and hotel accommodations are cheaper and easier to reserve. After a five weeks' stay at Redondo Beach, we drove home via the Gulf and East Coast, spending 10 days at Clearwater, Fla."

Bridge Casselman, 130 Campbell Street, Harrisonburg, Va.: "Long time no write! Excuses no good! Now live in beautiful Shenandoah Valley of Virginia, Harrisonburg to be exact. I almost never see any M.I.T. graduates, but plenty of Virginia Military Institute and University of Virginia men — all fine fellows. Hear from Ray Stringfield every Christmas. He saw plenty of activity as expert witness in lawsuits involving rubber patents, tires, etc. I may make class reunion in 1960 if present state of good health continues. Current job, manager of research and development, American Safety Razor Products, Inc. I would be overjoyed to see any '15 men who pass through this way."

Al Clarke, 511 South Warson Road, Ladue, St. Louis 24, Mo. (Too bad Al and Mrs. Clarke missed that Mexican party): "I have just returned from a visit of a month or more to Mexico, where I made an effort to attend the annual fiesta of the M.I.T. Club of Mexico but failed because of my ignorance. Having seen in the English newspaper of Mexico City that the fiesta was to start on March 12 with a cocktail at one of the hotels in Mexico City, I went around there with Mrs. Clarke about 7:30 P. M. and found the cocktail was held at noon. Apparently things in Mexico City are run on a little different plan from St. Louis. We were both disappointed, but when we got to the hotel that evening, too late as it were, we were cordially received by a representative of Du Pont who said he was a graduate of the University of Texas. I don't know what this all means, but anyway Dr. Killian and Dean Lobdell got suitable publicity in Mexican newspapers."

Jerry Coldwell from Naples, Fla.: "I am sorry to have missed the dinner in

New York but it was one of those things that couldn't be helped. Verta and I are down here until March 18 and then we go to Dallas via New Orleans. At the moment we expect to be home by the middle of April, but that could change too! Best to you and Fran." Alton Cook: "I always enjoy the New York '15 dinner — long may it persist. Am planning a 'sortie' to Boston about June 15. See you then." Ralph Curtis, 4 Birnie Avenue, Springfield 7, Mass.: "Here's the check — you do an excellent job in the class notes each month, so I miss them when they're absent. No change here — same company, same job — still honorary secretary for M.I.T. in this area. See about 20 or 30 boys and girls a year who ask about M.I.T.; 5 or 6 a year make it. It helps to keep me young. I stick pretty close to home and don't go out if I can help it because wife Irene has trouble with angina and diabetes. We get our rest on Cape Cod. If you get near Harwichport any time look us up — telephone Harwich 642. Grandchildren now are seven. Our six-year-old twins are the most interesting."

John Dalton, retired, from Providence, R.I.: "Hope this note finds Fran and yourself well and happy. I am leaving next week for my annual trip to Florida — will be gone about a month." Harvey Daniels: "I have just returned from a Florida vacation of two months, yesterday, and found your letter waiting. My wife and I continue to enjoy a somewhat mobile life — winters in Florida and all summer each year in Minnesota where the vacationing is also pleasant; and too, it's near the grandchildren. Greetings and best wishes to you, Azel, and to other old friends." Reggie Foster: "It's good to hear from you. Hope the enclosed will help. I am worried that perhaps you are not well. In any event my best wishes and a word of caution to take care of yourself, and get ready for that retirement." From Reggie's letter and some of the others, I can see you fellows have really missed our regular monthly notes and are concerned about me. Well, I am feeling fine — nothing wrong that a few good orders in business won't cure and I promise you all to do better with our column."

Loring Hayward, a real Civil Engineer in Taunton, Mass.: "I hope you are paying attention to this Good Friday (I did). I am back on the job after a year of operations and resting, more or less, and plugging along with little or no help. My son, Dick, has been taking a course at M.I.T. this past winter on city planning. He has been a planner at Bakersfield, Calif., and on the island of Guam, since the war, and now has gone to Louisville, Ky., on a new job. Loring, who has been to the class dinners with me now and then, is still with the Aetna Insurance Company, at Post Office Square, Boston. Bob is teaching English at a girls' junior college in Beverly, Mass., and still enjoying bachelor life. I suppose you are off on a long winter vacation trip. Have a good time."

Dave Hughes (now, wouldn't it be a real treat to see Dave and Brute after all these years?): "Not a new thing to report excepting that I saw Brute Crowell recently at an Alumni gathering and re-

minded him that we were planning on attending our 50th class reunion. He seemed to have forgotten about it, but will try to be there with me." Ralph Joslyn: "You have been a very efficient and faithful class secretary. All my best."

Parry Keller continues to be the hard working author, editor, and publisher of the University Club News, Akron, Ohio, but finds time to travel around, take pictures, and play with his grandchildren. Boots Malone, after writing from Sarasota, Fla., moved up to finish the winter at Bluffton, S.C., whence he returns to his retirement hide-out in Vermont. "We have been here since middle January, getting out of Vermont just in time to miss some horrible weather there. We are located here on Longboat Key with the Gulf at our front door and Sarasota Bay at our back (the key is only about 100 yards wide at this point), so we enjoy gulf swimming and bay fishing. A very nice spot."

That sly Ben Neal asks how I am getting along collecting class dues — I think he is looking for prospects for our 50th fund. And, by the way, have you sent a check or a pledge card to Ben for our fund? Time marches on toward 1965 and Ben needs all you can give him. He's doing a grand job for us. Others must have learned about this, for Ben writes: "Last June when I was out of the room at a meeting here, I was elected president of the M.I.T. Club of Buffalo-Niagara Falls. A peppy young fellow was elected secretary-treasurer, and I thought he would do all the work, but he was transferred to Richmond; so temporarily, at least, I have another job to do for M.I.T. I had to send out 225 meeting notices. George Easter will be there. I hope you saw Gabe in Florida. Sincere regards." Congratulations to Ben, Phil Alger and any others on their new honors, no doubt richly deserved. I know Ben will do a good job for M.I.T. Alumni up there. We couldn't have a better man to head up our 50th fund. They are lucky to have him for their club president."

Ken Boynton, retired: "I have been in Florida this winter but I plan to write you a real letter someday. I seem to have so many things to do with so little time to do them that I suppose it will be a long time before I do write you. Best regards." Well, Ken, I hope it won't be too long, as we'll all surely be glad to know how you are and what you are doing."

Ed Sullivan and his sister Anne wrote about the pleasant swimming on the pretty beach at Fort Lauderdale. It was before our annual visit to see my retired brother in Belleair (Clearwater), where during the third week in March we ran into a veritable monsoon. California need not apologize for its smog — Florida has its winds and rains. We could not get to see John Homan at Madeira Beach; but in between floods we canoed over to see Tess and Gabe Hilton, who live only about a mile from my brother's place. Our water-logged car wouldn't run, so Gabe had to push us home. We were chagrined but thankful to Gabe for his kindness in the drenching, pouring, cold rain."

And now, here's a gem of a letter from good Joe Livermore at 48 Ravelston Garden, Edinburgh 4, Scotland, describing his unusually interesting experiences. It's

great to hear from you, Joe: "It has been a long time (too long) since I have written you, but this letter has a dual purpose. First, please place the enclosed check in the proper channel to reach Ben Neal for the M.I.T. 1915 50th fund and tell Ben I send regards and best wishes. I've been over here in Edinburgh since October, 1956, reconstructing the North British Rubber Company plant. Within the next 60 days our new 100,000 square foot hose plant should be in production. Last year we doubled up our motor tire output and currently are completing a new boiler plant and electric distribution system. Each summer Marjorie and I have spent several weeks on the Continent: in '57 through Scandinavian area, '58 through France and Spain, and in June this year to Italy and Switzerland. Then in November I have flown back home on business and to visit my son and daughter. Last year I spent a few days with Dick '45, on his farm near Portland, Ore. So you see, Azel, I've been keeping out of mischief. Expect to return to the States early in 1960 in time for our 45th in June. Officially I retired — December, 1957 — actually have worked harder since then than ever before. With every best wish."

Remember you class dues — remember our 50th fund. Many thanks for all that you've all done to "help Azel." — AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

1916

We'll be expecting you at Chatham. (This message assumes you'll get this issue just before we gather for the 43d reunion at Chatham Bars Inn, Friday, June, 13, to Sunday, June 15.) Come for two days or for one day or even drop in for a meal or a visit or a round of golf. But do come. You'll be so glad you did!

Late in March, a post card stamped Helvetia bore the words: "All's well. En route home. No damage. Best regards and keep the good work going." And the picture on the reverse side showed snowy Alps and a ski lift, with the designation: "594 Luftseilbahn Wangs-Pizol, Bergstation mit Gasthaus Graue Hörner (1500m.)" Who's been skiing again? Of course — Ralph and Sibyl Fletcher, Mr. and Mrs. President-of-the-Class-of-1916! Further with respect to the Chelmsford and Lowell area, we understand that at the annual meeting of the board of directors of the Napachi Gun Club, Inc., of Lowell, Mass., former director Freeman C. Hatch, Jr., was voted an honorary membership in the Club.

Dick Hunneman comments on how small a world it is. His daughter (Ann Cutting) and Lev Lawrason '17 are neighbors on Wellington Avenue, Pasadena, Calif. Dick says: "Her husband, Elliott Cutting, M.I.T. '51, works for the Jet Propulsion Laboratories, Pasadena; has worked under Von Braun, is a specialist in the terminal maneuver of a ballistic missile, and has worked on the Jupiter-C rocket and the Explorer satellite."

The following collection of bits relates to the March 2 luncheon at Joseph's in Boston. Too late for inclusion in last month's column, they are still live items for they include so many individuals.

Specifically they are notes from some "couldn't-attend" of the Boston dinner. This is the way they go: Steve Brophy — "We are in the Bahamas at Harbour Island, and will not be back in time. Regards to all the lads!" Ray Brown — "I do not plan to be in Boston March 2. I am more likely to be in New York for the M.I.T. Club '16 luncheon rather soon." Hovey Freeman — "Will be in Puerto Rico!" Lewis Vose — "Will be in Florida." Dave Patten — "Still in California. Best wishes for a 'full' house." Doug Robertson — "Sorry, I will be in the Bahamas, I hope." Frank Ross — "Down in Florida." Francis Stern (from his secretary) — "Mr. and Mrs. Stern are presently in Los Angeles and will not return until the end of the month." Edward Williams — "Reasons of health." Paul Hatch — "Sorry, I will be out of the city next week on business." Jack Burbank — "Ten and a half months to retirement to Cape Cod." Theron Curtis — "We hope to be in Florida at this time giving the old joints some sun." Paul Duff — "I'm going to have a baby — I mean I'm due to bring one. I'll try to make it next time." Ed Graustein — "My good intentions to attend the dinner were upset by illness. Maybe next year." Walter Littlefield — "Sorry, date already filled." Will Wylde — "Sorry I can't make it but hope you will all have a good time." Dick Berger — "Sorry, but it would be very difficult for me to attend."

Back in March we included word from Jim Evans that Walt Binger was about to participate in something most unusual for a '16 man — fox hunting in Ireland. After coaxing, Walt has sent us some of the details. He, with two others who ride with the Fairfield County hunt in Connecticut — the master of the fox hounds, and a young fellow of 28 years — returned late in March from a fortnight of fox hunting in Ireland. While there, they went out with some of the greatest hunts in the world including County Limerick, Tipperary Hounds, Scarteen (Black and Tans), Kildare, the Galway Blazers, and more. They hunted seven times in nine days, were never in the saddle less than four hours and often longer but came through unscathed.

"These hunts included the renowned 'double bank' country where all fences consist of a steep bank (sometimes as much as eight feet high and only a couple of feet wide on top) with a ditch on both the approach and take-off sides. There is no rock or timber in this country and the fences are made by digging the two deep ditches and making the bank from the spoil. The ditches also act as drains and are always half full of water. When I came home from that particular hunt I estimated that at the high point my eyes were over 15 feet above, and as many short, of the field into which I had to jump. Most of the Irish ride like the old hunting paintings, leaning back and with their legs forward and their toes down. We had brought our own saddles which were proper for our forward seat, but on the best advice we lengthened our stirrups a little and leaned back on these great drop jumps. Otherwise one would have gone right over the horse's head. On two occasions I felt the horse's body

pressing between my shoulder blades. Of the 21 mounts that the three of us rode, there were only two horses not quite up to snuff. Being hirelings they probably were overworked during the hunting season, which was then drawing to a close. One of them went down with me at the bottom of a big bank and we rolled over simultaneously but separately in a field as soft as a featherbed. I was on him in a minute and we finished the hunt.

"Hunting is very different in Ireland than it is in this country. It is among the main interests of all the people. The farmers and priests come out and ride (we never went on a hunt in which there was not a cleric — either Catholic or Church of England) and the school children and teachers come to the top of the hill to watch the hounds and riders. A full figure of a thoroughbred horse is engraved on their largest silver coin. A big photograph of the three of us, mounted and in hunting regalia standing before a thatched cottage, was carried on the front page of the two principal Irish newspapers."

Will Wylde has a nice word to say about the news he gets from the column and contributes his bit. He's looking forward to his retirement July 1 of this year. Has no great plans for travel except perhaps six or eight weeks each spring, for he likes it too well right where he is in Stamford, Vt. As to skiing he writes: "I note with interest that our President, Ralph Fletcher, travels all over the world to ski. I still enjoy skiing very much but do practically all of mine at a hill only five miles from where I live. I might send word to Ralph through you that if he ever skis on Dutch Hill at Heartwellville, Vt., to ask any of the attendants if I am on the hill and to point me out to him; or if not, to ask them for directions to my nearby home in Stamford. I would dearly love to have him drop in for a hot buttered rum with me. That, of course, goes for any classmate. I expect to spend most of my time puttering around my home and garden, a pastime which I have had all too little time to do in past years." Yes, sir! Puttering around is good fun!

We recently saw a news item that Rex Harrison was about to go to Porto Fino, Italy, for a good long vacation, and just couldn't resist sending it to Francis Stern. For, as you will recall, Bob and Mrs. Wilson stayed in Porto Fino because of the strong recommendations that Francis made in these column notes. Francis reports having had a miserable winter. A week after flying to California on December 23d, he came down with bronchitis, which turned into a staphylococcus infection. This kept him on his back for three weeks and for four more weeks he was up only a couple of hours a day. At the end of February he and his wife left for Arizona and thoroughly enjoyed their stay at the Valley Ho in Scottsdale until their departure on March 19. Francis goes on: "Incidentally, any of our classmates who are looking for the utmost in comfort in the way of a nice resort, could do much worse than picking Valley Ho. Scottsdale has grown tremendously since I was there a few years ago and boasts some very plush eating places; and, of

course, it is now definitely on the map. Why? Simply because the Boston Red Sox, after 25 years in Florida, decided they'd come where the climate was really good; and after their first year of training there, they announced they would come back next year; and it looks as though it might be a fixed routine." Francis says it is remarkable how rapidly the desert sun fixes you up. They drove their car home from Arizona and at the time he sent his letter he was about to take himself off the "worry list."

Now to carry on some more of the story (written on Pink Sands, Harbour Island, Bahamas stationery in February) we received from Steve Brophy regarding the trip he and his wife took around the world last year: "The island of Ceylon is perhaps the most beautiful in the world. Lush tropical vegetation, elephants, Hindu priests and temples, mountains 7,000 feet high. India followed. New Delhi modern as tomorrow; old Delhi unchanged for centuries. Agra (the Taj Mahal); Jaipur, the pink city—we stayed in the Maharaja's palace there. All of India is most interesting and, incidentally, our best bet in the Middle East—democracy, as we know it, *can* succeed there, with help. If it fails, the whole East may succumb to Communism! We flew from New Delhi to Karachi in Pakistan—a desolate country, but western oriented and vital at the moment to our cause. From Pakistan to Suez via steamer is a wonderful trip. The Indian Ocean, the Red Sea, the Gulf of Suez with the Bible countries on both sides.

"In Egypt we went by automobile across the desert from Suez to Cairo, a modern city enveloping a very old one. The Nile-Hilton is the newest and largest hotel! The pyramids and the Sphinx are practically inside the city limits! There is much to see in Cairo and no disorders while we were there. Karnak and Luxor are a night's ride by train up the Nile from Cairo. As you know, this is where the great temples of ancient Egypt are located—also the tombs of the ancient kings, major and minor. To an old architectural student all this was most interesting. My wife complained of sore feet ('and the 110 degree heat,' she interpolates). Following Egypt we flew to Damascus, then Istanbul. The latter is where the East meets West. Turkey is a bulwark against Communism. They really know the Russians and hate them. No more fezzen in Turkey. It's against the law to wear them. No more baggy pants on men or veils on women. All western clothes now. Athens is just a short distance by air from Istanbul—but what a difference. Here is the cradle of European culture. A lovely city with evidence everywhere of our great debt to the Athenians of old. Art, architecture, philosophy, religion, literature—yes, and even democracy owe all or much to Athens! Rome followed, then Florence, then home via the same *S.S. President Jackson* we took from San Francisco; 40 days aboard, 48 days ashore; and *Columbia* is still the 'gem of the ocean.'" Thanks, Steve. We tried to "cut at will" but couldn't!

We regret to report the death of Merwin Bliss on February 19, 1958. He had been with the Factory Mutual for many

years operating out of the Cleveland branch office as one of the adjusters. In reply to a request for information, Hovey Freeman writes: "He was a very quiet and sincere individual and we shall miss him and his services very much."

Hovey Freeman stays very active in his business, and although he reaches retirement age in July he plans to stay on the job for a few years more. Says he had another short bout in the hospital, not serious, the result of a blow he gave himself last summer on his boat. "I was in the hospital less than a week and then left almost immediately for the South and enjoyed swimming, sailing, and sunning, first with my youngest son in Puerto Rico, who has moved there with his wife and young son. He is working in the First National City Bank. Then Mrs. Freeman and I flew to Nassau for a few days with our oldest son (who has gotten out of the hotel business and is in the real estate business) and one of our daughters who also lives there. I might add that both Puerto Rico and Nassau are booming, with tremendous speculation going on in real estate. We then flew to Miami, where I gave a talk on insurance. It is remarkable how you can get around these days in jet planes." Hovey is president and treasurer of Manufacturers Mutual Fire Insurance Company, the oldest and largest of the Factory Mutuals. His company has over 18 billions of insurance in force, up from about 3 billion in 1935, according to the annual report for 1958.

Leonard Best reports a seventh grandchild—a boy—born March 1 in Pittsburgh, Jonathan Ashley Ross, Jr. Says Len: "Grandpa Ross (Ralph H. Ross '17) took over first and now Grandma Best is babysitting—how they love it!" He and Ruth went to San Francisco on the *President Monroe*, leaving New York City on February 4, a nice trip with stopovers at Panama and Acapulco. They stopped over at San Jose with their two daughters, and then from Los Angeles they returned to New York by jet. Len has always been high in the councils of education in the state of New Jersey. In this connection he says: "Ruth won't talk to me but I am now heading the New Jersey Citizens Committee working for the college opportunity bond referendum in November. New Jersey is going to face a serious shortage of college facilities in 1965 if we don't move fast."

Emory Kemp also gave us a bit of accounting regarding the Boston dinner in March. Says (March 15) he is mighty glad this winter is over, for they have had steady cold though practically no snow and he can't take it the way he used to. A week later we received some *Boston Sunday Globe* clippings about a "storm" brewing on the Cape over what Emory calls a proposal by some "nitwit politicians to land grab over one-half of three towns and seize nearly 600 beautiful homes and landmarks on the Cape. We of the Cape think it just 'highway robbery' and the absolute ruin of the towns of Eastham, Wellfleet, Truro, and Provincetown." It all has to do with a proposed 100,000 acre national park including a proposed national seashore extending all the way from Chatham to Provincetown, and also some proposed

additional state park lands. Emory lives in Wellfleet, which would be particularly affected by the plan. The *Boston Globe* clipping noted that a large protest meeting was to be held in Eastham Town Hall on March 23. The clipping showed an alert picture of Emory together with a Mr. L. A. Crowell of Wellfleet as opponents of the park plan.

Saul Hoffman is semiretired and has been appointed by his textile firm, a division of United Merchants and Manufacturers, to take charge of their Chicago office. Both of his sons got their bachelor's, master's, and doctor's degrees at Tech. The older son, Myron '57, got his degrees in aeronautical engineering and was appointed assistant professor in that Department. In June he will finish a three-year stretch in the Air Force (research) and expects to return to the Institute. Younger son Allan '53 got his degrees in chemical engineering, went to the Paris Academy of Science on a Fulbright award for a year, returned last summer, and was appointed assistant professor at Tech. Saul always speaks most enthusiastically of the two other members of his family—his daughter Marilyn, who is finishing her first year in high school, and his wife Frances. Says he and his wife, as do most parents, "live to enjoy the fruits of our children's accomplishments."

Duncan Owler mentions comparing the faces in the 42d reunion picture with the faces in the 1917 Technique, which he says, by the way, he acquired by cash and not in exchange for a shirt in the Technique rush. The comparison indicates two things: 1) the Technique looks just the same as it did over 40 years ago, and 2) he is reminded that 40 years sure can make changes in one's anatomy. Says he hasn't any family and is in about the same position as he was at graduation and therefore nothing to report on that subject. He retired as president of the Fall River Light Company in November '57, after 41 years' service, and is still serving as chairman of the executive committee and is a director on one or two boards, which is at present the extent of his activity. "For outdoor exercise I do quite a lot of swimming in the summertime, and when it is not too cold, swing a golf club; hit the ball straight occasionally, but generally not, I won't mention the score, as it would make very uninteresting reading. For indoor exercise I play the pipe organ (not a virtuoso, however) which I would recommend to anyone who wants to relax his nerves and forget about business—he will probably live a little longer. I haven't seen or heard from any of our classmates for years; those that I knew quite well rarely if ever send in any notes, and your column in the Tech Review is the only knowledge I have of any of them. In this area Howard Hands, whom you know quite well, is still with the New England Electric System, although I haven't seen him for a long time. Congratulations on the outstanding job you have done as class secretary. I admire your patience in securing class news." Thanks, it's the fine responses that make the job interesting!

We close now, urging that you drop either Ralph Fletcher, President (Box 71, West Chelmsford, Mass.) or your Secre-

tary any bits of news you may have and thus keep this little old column full and interesting. If you haven't been quoted in the last eight months, please consider yourself due. — HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N.J.

1917

June is a month of activity: graduations, reunions, alumni gatherings, the start of vacations, weddings, and a host of other equally absorbing interests. We hope that you will be one who can be recorded present in the 1917 group at the Institute's Alumni Day on Monday, June 15.

Dick Catlett writes from Richmond, Va.: "The M.I.T. Club of Virginia, of which I am for the moment president, had Dad Wenzell as its guest speaker at a dinner meeting on March 6. Dad did a grand job of explaining the World Bank, and his audience was enthusiastic. I have retired from regular work for Catlett-Johnson Corporation but have a modest retainer as consultant and still have a desk at the same address. Martha and I plan to take our first long vacation by a Mediterranean cruise on the *Exeter* leaving New York the end of May."

The *Ansonia* (Conn.) *Sentinel* of March 19 reported: "Austin Kuhns, senior Vice-president of Farrel-Birmingham Company, Inc., will retire on April 1 after 36 years with the concern. He joined the then Farrel Foundry and Machine Company, at its Buffalo, N.Y., division on November 1, 1922, as a sales engineer. In 1934 he was made executive engineer in charge of marine engineering and sales. In 1943, he was elected a director of the company and became vice-president in charge of development and research, with headquarters in the company's New York office. In May, 1951, he became vice-president and consulting engineer and transferred from New York to the executive offices in Ansonia. He was elected senior vice-president on March 15, 1956. In October, 1956, he was made chairman of the finance committee, in which capacity he continued to serve up to the date of his retirement. During World War II he was in charge of the company's work on propulsion gearing for the U. S. Navy and Maritime Commission. For this work he was awarded the Navy Certificate of Commendation."

Ed Payne, who has retired from a lifetime of service with the Bell Laboratories, specializing in the design and development of telephone transmission apparatus with emphasis on transmission networks, writes from College Park, Md.: "We have a pleasant little house near the University of Maryland. It is a 20-minute drive from Washington. Since September last, I have been working at the National Security Agency at Fort George G. Meade, which is about midway between Washington and Baltimore. The N.S.A. work is so highly classified that we have only recently been permitted to say that we work at N.S.A. I can tell you that my associates are pleasant and the work is in line with my previous experience. This is a full-time job without any intervals of leisure. I plan, subject to acts of God, and government, to work here for about five years."

Captain George Henderson, U. S. Navy, writes: "To many of my friends 65 years of age means being put out to pasture, but I am already there. Since retiring from the Navy, my wife and I have done many of the things we thought we would like to do such as going south every winter. This past winter we spent a few weeks in Jamaica and found it very pleasant. My mother still lives in Massachusetts, and I make several visits each year to see her. Two of my three children are at present in the state of Virginia, so my hanging on here (Arlington, Va.) hasn't worked out too badly."

The Mathematics Department of Phillips Exeter Academy was featured in the February issue of the Phillips Exeter Bulletin. And on the first page devoted to the faculty was a picture of the George Albert Wentworth Professor and Chairman of the Department, Philip E. Hulburd, M.I.T. 1917. Phil's clean desk and executive appearance would do credit to a corporation president addressing his executive committee. Bordering the picture appears the following: "When Mr. Hulburd retires at the end of the current academic year, he will become a member of a very small group: he will be the 13th teacher ever to have served the Academy for 40 or more years from among the 394 men who have been appointed to teach here since 1781. A graduate of Exeter in the class of 1913, he specialized in architecture at M.I.T. and seemed well started on a career with Stone and Webster and a Boston construction firm at about the time the United States entered World War I. After a tour in France as a Coast Artillery officer, he found architecture unpromising at the war's end. On a chance visit to Exeter, someone suggested he join the five members of the mathematics department. He succeeded William Allen Francis, the first appointee to the Wentworth professorship. Member of countless faculty committees, he has been summer session director; and he continues to serve as class agent for 1913 and vice-chairman of the Wheelock College trustees. His son, Robert Hulburd, '38, is an officer of the alumni association, a teacher and coach at Andover. The Hulburds' address after June will be Meriden, N.H.

The deaths of three members of our Class have been recorded: The first, that of Alexander Astorian (who must have changed his name to Astor), was recorded in the *Waltham News-Tribune* of March 17. According to class records he was 66 years of age. The article lists him as an architect and contractor. Services were held in St. James Apostolic Church in Watertown, which he designed and constructed. He was a native of Armenia. He leaves a wife, daughter, and two sons.

H. Chandler Stearns of Lexington, Ky., who was a member of the Class for only a short time and did not graduate, died on March 12.

Carl M. Gilt died on March 23 at his home in Princeton, N.J. He retired in 1957 from an executive position with the Consolidated Edison Company of New York, Inc.

We are advised that Rear Admiral William A. Sullivan, otherwise known as Sully, has finally come to roost in Beachwood, N.J., after seeing the world while

in the Navy. Very appropriately he lives on Starboard Street. Howard R. Stewart of H. R. Stewart Enterprises, Newtown Square, Pa., made a trip to Worcester, Mass., recently to visit his daughter, who had just presented him with a grandchild.

Here are two brief thoughts to close up these notes: "It's not the minutes you put in at the table that make you fat; it's the seconds." And another: Said the preacher as he slipped on the banana peel: "It's odd how old forgotten words spring to mind, isn't it?" — W. I. McNEILL, *Secretary*, 107 Wood Pond Road, West Hartford 7, Conn. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

The older you grow the more some questions have positive answers, and the more others do not. Choose your own approach to the enchanting question of why Harold Weber was the speaker at the annual guest night of the Milton Woman's Club last winter. To be sure he lives in Milton. Now comes the question of whether his wife had the finger that triggered off his acceptance. The powder of what to say must have been his already, perhaps even the same grains he exploded at our class get-together two years ago when he talked about lengthening human life to 150 years or so. Anyway, the newspaper gave the coming event a nice write-up, mentioning among other things such lights and shadows of his career as holding patents in the fields of paper, textiles, electronics, heavy chemicals, and petroleum. Harold has published many papers and is the author of a widely used textbook on thermodynamics.

Joe Pearson is bound for Indonesia, which at once raises a lot of questions. My informant says, "He will be engaged in special engineering work for an American oil company." Now that is a long way from anything like a positive answer, especially since Joe is an engineer with Jackson and Moreland, which is a firm of consulting electrical engineers. Digging a bit deeper, we uncover the fact that he is a prominent member of the First Calvary Baptist Church of Lawrence, Mass., which makes us wonder whether this is a missionary jaunt of some kind. Maybe you know the answer. The only light we have on the vast, unending darkness of this venture is that his itinerary will include stops at Tokyo, Hong Kong, Bangkok, and Singapore and he plans to return by way of Europe, completing a trip around the world.

We thought we knew something about the Rossmans, but doubt shakes our mind. To the best of our knowledge they bought six acres of land in Paris Hill, Maine, with a 150-year-old Cape Cod cottage on it. The idea was a place to retire where he could pursue his hobby as a lapidary. The house has four fireplaces and a modern bathroom as defined by Maine standards. Why they also needed oil heat with those four fireplaces is a question grandfather couldn't answer. This time of year the lilac bush and the tulip tree are much more important. Well, not to be diverted from our inquiry, we thought they were going to stay in Paris (Maine, that is) all

winter, but the Christmas card came from Detroit. Figure that one out. Or if you don't give a hoot, then wonder whether Gretchen is going back to Lanikai on the windward side of Oahu (you land lubber) this summer; whether she will get a job as dean of women or something at the University of Hawaii, or tackle the Episcopal diocese of Honolulu, which includes Okinawa whither one of the boys in my Sunday School class set forth the very week these words are being written in order to join his father who is a master sergeant with a missile battalion there. (Now you can wonder about that sentence.)

I saw Clarence and Mrs. Fuller in Foxboro, Mass., in March. They came as a surprise to hear me make a speech, doubt shaking their minds as I could see, despite the old-fashioned courtesy. Clarence, as vice-president of sales for the Foxboro Instrument Company, had some kind of finger in the company's 50th anniversary, deponent sayeth not which finger. He was with the U. S. Bureau of Mines in 1919. It was some kind of underground organization, so he quit to join Foxboro the next year. At first he was in production, but when he knew all the answers there he changed to sales, where nobody ever knows all the answers. Now, as he faces retirement, he can't decide what to do. Too many crackling ideas that are alive and venturesome enough, he says, but too indefinite. So you see, as we said before, the older you grow the more some questions have positive answers and the more others do not. It is now thirteen minutes past four in the morning. I've worked at this desk since seven o'clock last night. Why, I don't know. Anyway, I enjoyed what I was doing and expect to be paid for it, too. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N.H.

1919

It was with much regret that we learned of the passing away of Howard Searles at Marlboro, Mass., on March 8 following a brief illness. A fine man and an excellent teacher, he will be missed by all who knew him.

A posthumous honor to Kenneth Davidson is the renaming of the hydrodynamic research laboratory at Stevens Institute of Technology, now to be called the Davidson Laboratory. Ken was founder and first director of the facility. As part of a "memorial to Dr. Davidson, the school will also hold symposiums on some aspects of hydrodynamics."

We have received a current address for Russell Hamilton. — 75 Prospect Street, East Orange, N.J. — and hope that word will come in on the other addresses requested.

We don't know whether the June issue of Tech Review will hit the road before our 40th reunion, at Wentworth-by-the-Sea, but we hope it will.

Coming to the reunion (in addition to those mentioned in the March, April and May issues, and as of today, April 14, when this is being written), with extra news notes, are the following: Dan Hall, who writes: "Have been delaying about the 40th due to an indecision, but I hope to be able to make it, so count me in. Are

wives included? (Ed. Yes, indeed!) Hope to see you in June in New Hampshire." Maurice Goodridge, who says: "There never seems to be any critical news, but will say I plan to go to Wentworth-by-the-Sea in June, and hope we have a good crowd and good weather. Affairs in electric utility are continually new and pressing, but not alarming. I did get to Chicago recently to Edison Electric Institute Sales Conference just to change the picture for one week. Will see you in June." George McCreery tells us: "Construction business dissolved. Full-time lecturing at M.I.T., Civil Engineering Department, in construction management." Leo Kelley, whom we had been missing at the class luncheons at the New York M.I.T. Club each month, says on his card: "Just got back from a trial which lasted three months up in Utica." George McCarten writes that he will avoid black cats and hospitals like the plague, for he wants to be sure to be at the reunion. Clarence Nutting says he can probably only be at the 40th on June 13, but better some than none. Hope he can stay longer. He writes in addition: "Still with textiles in New England. Now with Divisional Development Department of J. P. Stevens and Company Inc., located in North Andover, Mass."

No news notes, but they're a-comin' to the reunion! Bernard S. Coleman, Walter Walworth, Hyman G. Spector, Maurice Role, E. G. Paterson, Jess Stam, and Fred Hewes.

The following are not positive as of early April, but hope to be there: Stan Weymouth, who is pretty sure that he can be there at least part of the time, and kids your class Secretary about his golf; Marshall Balfour, who just returned from a round-the-world tour on behalf of the Population Council of New York; Jim Reis, who writes that he can't tell till he gets back from Mexico. Hope you make it, all of you boys!; Walt Howlett; E. H. Aldrich; Dick Holmgren; Dutch Seifert; H. A. Zimmerman; and E. E. Saunders, who says: "I have retired from the Navy and after two months in Hawaii and one at Port Hueneme, Calif., with our son Lieutenant Commander E. M. Saunders, C.E.C., U.S. Navy, we have moved into our retirement home on the mountainside overlooking Asheville, N.C. Our new address is: 723 Town Mountain Road, Asheville, N.C."

Afraid they can't make it (And we'll be very sorry if they are not with us): Alfred Johns, who writes that other commitments will prevent his attendance. E. C. Adams, who says: "Condition of health makes it impossible for me to be present. Best regards to all present." We hope that you will be in tiptop shape soon! Ted Shedlovsky (with Rockefeller Institute for Medical Research) says: "Sorry! Have to be in Europe all of June. Lots of luck!" Ed Pickop, who lives in Honolulu now, writes: "5,000 miles is just a little too big a distance. Aloha from the 50th state!" Mason Noyes: "Am now at Naval Ammunition Depot, Crane, Ind., mixed up with missiles." Might hop aboard a missile, Mason, and sail over to New Hampshire! Fred Hunter writes: "I've retired to a hilltop in the country in California. It takes a major disturbance to get me off of it." Doc R. S. Hunt says: "Still plodding

along, nothing new has happened of late or foreseen soon."

No news notes, but doubtful about coming: Arnold Staubach; Jim Moore; Charles Maloy; Mrs. Walter C. Hayden; John Merrill; Albert Reynolds; Carl Pierce; Harold Putnam; E. D. May, Ernest Perkins; Ed Scofield; Marshall Lee; and somebody in St. Louis who forgot to sign his card. Louis Brown says: "Sorry, can't make it. Regards." Robert A. Montgomery writes: "Taking things easy (Winter Park, Fla.) and enjoying gardening, golf, and University Club activities." And Don Kitchin says his good wife has gone with him to our previous reunions, but this time it's her turn; so he's going to escort her to the 40th reunion of her class at Elmira College. We'll miss you, boy! We might mention that in his letter Don says he now swims 1,000 yards in his daily stint at M.I.T. Congratulations! that's really keeping in trim, I'd say! And congratulations, too, on the many honors that have come to you this past year in the insulation and electrical manufacturing fields.

And now, in closing, we certainly hope that most of you will gather at Wentworth-by-the-Sea on June 12, 13, and 14, and for our Alumni Day festivities at M.I.T. on June 15 when our 40th reunion gift will be presented to the Institute. Cheerio! — E. R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

1920

There is evidence that our classmates are getting to the stage or age when they can do a bit of relaxing. While in Bermuda in April I ran into Harry Kahn and his attractive wife and also Don and Millie McGuire. Don started with our Class but is presently affiliated with '21 for some reason that escapes me. A card from Chuck Reed emanated from St. Croix, Virgin Islands, and he indicated great satisfaction with that vacation spot. A note from Foster Doane says that he and Mrs. Doane not only visited Frank Badger in Hollywood Beach, Fla., but also went to the Virgin Islands, then to Puerto Rico, Haiti, and Jamaica. Foster says that the Badgers' place at Hollywood Beach seems like home to him now and he comments on the wonderful view of the inland waterway and the sunsets that are "out of this world." Having stayed at Frank's place, I can second the motion. I presume that many other classmates have gone traveling this winter but are still reluctant to admit that they don't spend all their time working.

Norman Cate is now in Arcadia, Calif. John Quinn's present address is 542 Chestnut Street, Waban, Mass. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

If you receive these notes prior to Monday, June 15, and you haven't already planned to join the 1921 group at Alumni Day on campus in Cambridge, wire the Alumni Association for tickets and grab the fastest transportation to a day of fun and relaxation. Bring your wife, children, and guests, too. Biggest event: the in-

auguration of Dr. Julius A. Stratton '23 as the 11th President of M.I.T. As usual, our group will lunch together in Du Pont Court. Details of other events will be found elsewhere in this issue of The Review. The social hour on Briggs Field precedes dinner in Rockwell Cage, at which 1921 classmates, wives, and guests will gather once more around the festive board. In lieu of speeches, Arthur Fiedler and the Boston Pops Orchestra will then play a special program in nearby Kresge Auditorium. C'mon along! You'll enjoy the day and we'd all like to see you again.

Dr. Augustus B. Kinzel is featured in the news in an article in the *Danbury* (Conn.) *News-Times* announcing an address to the Methodist Men's Club there in March on the subject of "Research Techniques and Faith." Gus has also been honored by being named vice-president of the Engineers Joint Council. He is the coauthor of the Engineering Foundation's volume on *Alloys of Iron and Chromium*, the most recent of his many technical publications.

Ormond W. Clark reports his address as Box 67, Whitehouse Station, N.J. Edward W. Jackson has moved from Detroit to a new home at 18750 South Vermont Avenue, Gardena, Calif. Armand S. Kreeger now receives mail at 201 Geranium Street, Metairie, La. Dr. George Thomson says he now lives at 1031 Metropolitan Avenue, Milton 86, Mass. New addresses are also available from your Secretary for Max R. Butter and Dana C. Huntington. We have recently received mail from LeFevre Lane in New Rochelle, N.Y., and assume this indicates recognition of the fame of our own Moose LeFevre, who has long made his home up Westchester way.

A letter from David O. Woodbury is always a major event in our humble editorial life. Complete with a note penned by India Woodbury comes the following welcome missive: "Well, you can't complain that I haven't let you alone! Have been on the point of writing you the Woodburiana all winter but one thing or another, sometimes two or three, has kept me from it. I meant to do better. Here are some of the reasons I didn't:

"Since November and until yesterday, I have been engaged in writing a scientific 'whodunit,' which has just gone forward—or is it backward—to the publisher. This is a virgin effort in that it is my first try at extended scientific fiction. Please note that this is not science fiction but a full-dress treatment of the kidnapping of a member of the faculty of what looks like, but is not, M.I.T. I've had a lot of fun doing it and hope that, if it is published, I will not be cut loose by my friends, black-listed by the Russians, or placed in jail by D.O.D. This gives a fair idea of what it is about. Incidentally, I put in a little gentle satire on modern computers, having one of them find the name of the unknown criminal. I got in SAGE, too!

"I was not present at, but have to some extent benefited from the launching of my latest sober effort, *1001 Questions Answered About the New Science*. This book emerged on March 1, 1959, and no one has called with a loaded gun so far. The trick in these books is to ask the questions yourself, which I did. Naturally, I asked

only the ones I could answer. The book contains everything I ever knew, ever heard of, or ever guessed about science and engineering. I hope some of it is right, since a high school boy just wrote me, pointing out a really massive error in a table of powers of 2 which I printed in *Let ERMA Do It* three years ago. This table got by publisher, printer, some four or five professors, and me and has never excited attention until now. Is this some sort of commentary on education?

"To continue with books: The publisher and I have a grand plan for doing a picture book on present and future technology. This will be a cinch for me; all I will have to do is to collect from some thousands of companies, universities, and government departments, pictures of everything and then let the publisher throw away what he doesn't think looks pretty. Of course, I shall have to prepare 100,000 words of captions and so forth.

"All of these projects have been somewhat diluted by the fact that we built a house seven miles from the nearest town in the Arizona desert this winter and are now living in it. While it was a-building, we lived in a motel but got fed up about the time they got the roof on and came here to live. Since our former home in Santa Barbara is rented, we moved in with little furniture except army cots, sleeping bags, chairs, and a card table. We had partial plumbing, no furnace, no stove, no floors. Cooking: sterno; heating: fireplace; guests: carpenters, plumbers, heating, and ventilating engineers, painters, and so forth. This may sound easy enough for sunny Arizona, but as it turned out the temperature went down to 30 degrees every night and the wind blew better than 60 miles an hour most days. Things are better now, with the house about 80 per cent done and complete with equipment and furniture. We are adding refrigeration for the summer heat, which begins in April. In May, we will leave Scottsdale and come back to normal living in Maine.

"A cousin of mine recently asked whether anything had been done to perpetuate the Woodbury family. I was able to tell him that we have four grandchildren scattered around so far. We are in a fair way to overrun the country with Woodburys. I have four married sons and all the grandchildren are boys. See you in June!" India's note says, in part: "I've just done the painting and making draperies." Many thanks to both of you.

As forecast last month, the meeting of a group of the Class of 1921 was held in March in New York City to set up the next steps in the program for our big 40th reunion during the 100th anniversary celebration of M.I.T. in 1961. Our gracious host for this meeting was Irv Jakobson, who invited the group to be his guests at the New York Yacht Club. The incidence of the St. Patrick's Day parade outside only served to heighten the interest in making our 40th the real celebration it is intended to be. Present besides Jake were Mich Bawden, who flew in from Boston for the occasion; George Chutter; Cac Clarke; Liz Gatewood; Sumner Hayward; Bill Kennedy; Moose LeFevre; Joe Morrell; Class Prexy Ray St. Laurent, who made a special trip down from Con-

necticut; and Joe Wenick. The enthusiasm and extensive forward planning make us urge you to plan now for your wholehearted participation some two years hence. Along personal lines, we learned that Jake is chairman of the Community Chest in his home town of Glen Cove, N.Y., and that the Chutters are celebrating the arrival of their first grandchild.

Heres hoping we see you June 15.—CAROLE A. CLARKE, *Secretary*, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N.J. EDWIN T. STEFFIAN, *Assistant Secretary*, Edwin T. Steffian, Architect, 11 Beacon Street, Boston 8, Mass.

1922

Spring is here, so it is appropriate to quote from Ros Sherbrooke's March letter about Yardley Chittick: "Yardley is now captain of a nice 38-foot Alden cutter which he and Ruth sailed up alone from Saybrook, Conn., last November—late. Attest their yachting ability: they sailed this craft, new to them, all the way to Cohasset in very cold weather—25 degrees in the cabin for breakfast. No heat from a good old shipmate stove either; just a lot of clothing, chatter, and Old Grandad, I hope, to keep them above freezing. Yard has been very busy all winter overhauling the engine and getting things shipshape. The engine is a good idea, ask Ab Johnson. At the moment the Chitticks are resting in Bermuda for a few weeks; they flew over, though." It was a pleasure to receive such an encouraging class letter from our President, Parke Appel. Let's push the \$400,000 gift upward by responding more generously. This will not only give the Institute a direct boost but will raise to a higher level all class giving.

Ray C. Ellis, Vice-president in charge of international operations of the Raytheon Manufacturing Company, flew to Russia in March as head of a six-man delegation chosen to study electronic plants in the Soviet Union. The *World-Telegram and Sun* of New York has complimented Crawford Greenewalt of Du Pont and his latest book *The Uncommon Man*. He is given credit for the personification of the uncommon man, "the lone individual whose dreams waken him in the night while others lie contentedly asleep."

Duncan Linsley has forwarded a clipping from the *New York Times* about Allen King. In New Orleans, Allen S. King was elected president of the Edison Electric Institute, the trade association of the nation's investor-owned electric utilities. Allen King is president of the Northern States Power Company of Minnesota. In his acceptance speech, he indicated his intention to stress the importance to the power industry of its local role in promoting regional development programs. Allen and Ann live in Minneapolis. They have one son, George Stewart, who is an Episcopalian clergyman. Allen's chief outdoor hobby is piloting a 30-foot yacht on Lake Minnetonka. He enjoys reading biographies and books dealing with history.

Thanks to Clate Grover and the Whitehead Metals, your Secretary can now

"smooth the rough edges" of his problems with an inconel file. It arrived just in time. An article in the April 1 *Wall Street Journal* stated that Lockheed had acquired controlling interest in the Puget Sound Bridge and Dredging Company. Our own H. W. McCurdy can probably supply the remaining details. We hope this gives Horace more time to spend at M.I.T. and at our annual reunions.

Having just returned from a meeting, your Secretary can report that big plans aimed directly at student assistance and encouragement are in the offing for the Alumni Fund. The encouraging feature to the fund board is the continued increased interest in Alumni financial aid to the Institute. It is also thrilling to hear of the importance of the Class of 1922 in this program. An inspection yesterday of the Nuclear Reactor showed great results accomplished in a short space of time by dedicated people. Be sure to visit there whenever you possibly can. Some new addresses of interest are: Eric F. Hodgins, 30 Rockefeller Plaza, New York 20, N.Y.; Luciano A. Preloran, Martinez FC GBM Argentina; Warren D. Sherman, Farmington, Conn.; Morris J. Gordon, Mansfield, Ohio; Albert A. Gioiosa, Bass River, Mass.; Samuel Sokolsky, Palo Alto, Calif. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo 3, N.Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N.Y.

1923

Dr. Julius A. Stratton recently announced a gift in excess of two and one-half million dollars from Mr. and Mrs. Cecil H. Green of Dallas. This gift will be used to create a Center for Earth Sciences. Mr. Green is a vice-president of the Texas Instruments, Inc., and has been active for many years in Institute affairs. Dr. Stratton stated: "This magnificent grant of Mr. and Mrs. Green will permit a major effort to be made for a better understanding of our physical environment of land, sea, and air."

John W. Beretta, of San Antonio, Texas, is again in the news as he was presented the award "Engineer of the Year" by the Bexar Chapter of the Texas Society of Professional Engineers, Inc., at a dinner dance in his honor at the Gunter Hotel on February 27. Jack has served as president of the National Society of Professional Engineers and was the founder of the Texas Society of Professional Engineers, holding charter membership number one. Recently, the magazine *American Engineer* published a picture of Jack and a short article when he was welcomed to a reception at Fort Benning, Ga., for 110 top ranking military and civilian leaders attending a Conference of Civilian Aides to the Secretary of the Army and Army Commanders. Jack is civilian aide from the Fourth U.S. Army area.

William Webster was recently elected president of the New England Electric System. He joined New England Electric System in 1928 and has held executive positions in several subsidiary companies.

Gerald A. Fitzgerald, Professor of food engineering at the University of Massachusetts, was the guest speaker for the

St. John's Mens' Guild Communion breakfast in Hadley, Mass., on February 15. His subject: "The Small Businessman in Persia." Professor Fitzgerald is the author of numerous technical papers on frozen food technology, nutritional values, and quality control; and in 1948 he was awarded a "Certificate of Appreciation" by the U.S. Secretary of War for development of Army rations during World War II.

William Wise, director of the Connecticut Water Resources Commission, spoke at a meeting of the League of Women Voters in Cheshire, Conn., in March. In 1958, Mr. Wise was appointed by President Eisenhower to membership in the Water Pollution Control Advisory Board.

Eger V. Murphree, President of Esso Research Engineering Company, in a talk before the American Chemical Society in Tulsa, outlined his company's plans to underwrite an advance university course for technical personnel that would be developed, organized, and conducted at the Esso plant in Linden, N.J., in co-operation with a university in the New Jersey-New York area. In his talk, Murphree said the nation "faces a need of increasing urgency" to provide better creative conditions for scientists. He said individual technical achievements should be well rewarded and ample opportunities presented to expand scientists' knowledge via forums, seminars, conferences.

Raymond P. Harold, President of Worcester Federal Savings and Loan Association, received, on April 15, 1959, the Isaiah Thomas Award of the Advertising Club of Worcester, Mass. The award, a replica of the historic Isaiah Thomas printing press, was established by the Advertising Club in 1950 to give recognition to "citizens whose personal efforts and accomplishments have made Worcester a better community in which to live, to do business, and to enjoy living." In addition to his post at the Worcester Federal Savings and Loan Association, Mr. Harold has compiled an outstanding record of business, civic, and community service. Currently he is chairman of the Worcester Redevelopment Authority, chairman of Assumption College development fund committee, chairman and director of the city's 1959 Heart Fund, chairman of the Massachusetts Scholarship Foundation, and cochairman of the Catholic Charities' 1959 Stadium Festival.

A recent letter your Secretary received from Royal Sterling reads as follows: "I have just returned from a trip to Mexico where I had planned to attend the M.I.T. Fiesta; but between hot weather in Acapulco and dysentery, I decided to come back to Florida. However, I saw an old college roommate and fraternity brother, Fernando de la Macorra, and his charming wife and one of his four children. I think that seeing someone like that after 35 years makes us realize the years which have gone by since graduation and the few years remaining to see old friends once again."

Your Secretary enjoyed a pleasant two weeks' cruise on the *M. S. Stockholm*, stopping off at Nassau; Port-au-Prince, Haiti; Kingston, Jamaica; and Cap-Haitien, Haiti, in the early part of April.

It is with a good deal of regret that we announce the death of Penn Howland on

April 8, 1959. Penn was currently treasurer of the Class, was chairman of our recent 35th reunion, and has always been very active in class affairs. Your Class has lost a very valuable member, and there is no question that we will miss him. We wish also to report the death on April 12, 1959, of Charles M. Jones, who has been associated with John A. Roebling's Sons in Trenton, N.J.

We wish to advise of the following address changes: Lester S. Champion, 40 East 9th Street, New York 3, N.Y.; Armand T. Chandonnet, 20 Mostyn Street, Swampscott, Mass.; Vice Admiral Ralph W. Christie, P.O. Box 8027, Honolulu 15, Hawaii; Arthur W. Davenport, Stone and Webster Construction Company, Caixa Postal 7748, Sao Paulo, Brazil, South America; Gabriel Nathan, 167-16 Hillside Avenue, Jamaica, N.Y.; Powell Robinson, Ketch Road, Morristown, N.J.; Herrick O. Tappan, 2 Meadowbrook Road, Westton 93, Mass.; Ivan L. Tyler, 2032 Orrington Street, Evanston, Ill. — HERBERT L. HAYDEN, *Secretary*, E. I. du Pont de Nemours and Company, Leominster, Mass. ALBERT S. REDWAY, *Assistant Secretary*, 47 Deepwood Drive, Hamden 17, Conn.

1924

Another couple of weeks and a great many of this column's constant readers will be basking on the sands of old Cape Cod. That is, if the weather is what it should be, we bask. If it's "unseasonable" (a word in common usage to explain the normal weather at any summer resort), we will have no difficulty finding other activities. Better bring a trailer with you. If the rumors seeping out of Griff Crafts' Loot Committee are true, you'll need it to carry home all the mementoes your classmates are donating to the festivities.

Let's start off with the latest bit of news we've collected. For some time Carl Muckenhoupt was head of the Department of Physics at Northeastern University in Boston. Then he went with the Office of Naval Research as head of the scientific section in Boston. Now he goes back to Northeastern, this time as director of research. There's good news from Frank O'Neil. He's recovering nicely from that heart attack of last winter. Like all such things, it will be a long haul, but things look good from here.

All those long-distance travelers are beginning to show up again. Having escaped the winter, they're wending their circuitous ways back home. The Lehrers are expected momentarily, as this is written, after a tour of Florida, California, Hawaii, and we don't know where all else. A card from Honolulu showed a colorful collection of reef fish. Ray said there was lots of interesting wild life both under the water "and on the beach." The Carroll Dunns returned in mid-April from a two months' trip to Africa and the Mediterranean. Royce Greatwood was undoubtedly on business rather than vacation, but he's back now from a trip to Japan. He had been there since November.

Don't know exactly where Paul Miller went this winter, but at one point he hit Puerto Rico and while there spent some time with the Luis Ferrés. They promised

to come up for reunion, but to date there has been no direct word. The Roigs will be there, but Al is almost more of a Floridian than a Puerto Rican now. And so will Professor Candelario Calor Mota of the University of Puerto Rico. He's having a sabbatical next year, and is starting right by going to Europe via Cape Cod. After that he takes in the Edinburgh Music Festival, the night life of Paris, then on to Madrid where he will settle in to finish a book on structures in Spanish.

The learned Dr. Anatole R. Gruehr, Charles S. Baylis Professor of Economics and History and Head of that Department at the Polytechnic Institute of Brooklyn, is heartbroken. He has an American Society for Engineering Education summer symposium that will prevent his being with us. In spite of that title, Anatole still considers himself an engineer. So do others. He's president-elect of the New York State Society of Professional Engineers and a director of the National Society.

The Cardinal family made the news in Newark several times recently: first when Paul was elected to the board of directors of the New York Board of Trade; second, when the engagement of Miss Kathleen Hussey of N.Y. was announced to Paul Jr. (that one, by the way, had the confusing dateline of Cologne, Germany!); and third, a social note headed "Anne Cardinal's Happy 21st Birthday." After a detailing of the party, the writer couldn't pass up the opportunity to play on that name. Examples: "Almost all the eight young Cardinals are following their parents' example as birds on the wing. . . . The two married daughters . . . are too busy right now with their own young fledglings to wander far from their own nests." All these avian items, by the way, are courtesy of Cac Clarke, eagle-eyed '21 secretary, who has his own private clipping service for the benefit of the rest of us. Nothing that happens in northern New Jersey with any M.I.T. connection escapes his sharp shears. It's exceedingly helpful.

Austin Cooley's outfit, Times Facsimile Corporation, has been a subsidiary of the *New York Times*. In March it was bought by Litton Industries of California "for an undisclosed amount of cash." It will continue as a division of Litton with Austin as executive vice-president. For many years Sargent Heath was with a textile concern in Worcester, recently as executive V.P. and treasurer. In 1955 the company was sold and went south. Sargent stayed behind and joined Washburn Company, makers of hardware and wire goods. Recently he was made assistant treasurer. This is in addition to a whole raft of other titles both in the parent company and its subsidiaries.

A goodly turnout of the Class showed up at the mid-April luncheon at the New York M.I.T. Club. Messrs. Blanchard, Cardinal, Cooley, Correale, Lassiter, Littlefield, McCoy, Rudd, Schooler, Tanck, Winger and Shea, an even dozen.

A sorry note just arrived from Mrs. Richard J. Bundy in Florida. She says that Dick passed away last July after a long illness due to a rheumatic heart condition.

The Reverend Gertrude Harris has left her latest ministry in Greenville, Maine, to

go to the Koinonia Foundation in Baltimore. This gets a bit confusing. Is she going to be a missionary? Well, judge for yourself. Gertrude says: "If you don't know Koinonia, it is a training center where professional people going overseas to share their skills are given a knowledge of the history, culture and life of people and nations all over the world — their spiritual and material needs and longings — and also experience a considerable deepening of their own personal faith and prayer, and develop the qualities of love and understanding needed to reach out to others in the spirit of Christ." There's another Harris we can't tell you so much about, Hank Harris. All we've known for years is that he had a Springfield, Mass., address. Now all we know is that it's been changed to Santa Monica. Maybe we'll get some dope from our other Santa Monicans. And it sounds as though J. Lynch Piland may have retired. At least Pi's gone from Washington to Beaumont, Texas.

Bill Giddon is still V.P. of Sandler of Boston making women's shoes, "ask the wife or daughter," and works at it in between tours. He's been to Europe a couple of times in recent years, last year went around the world. Bill has one son who is after a record of some sort. He already has A.B., M.A., and D.M.D. degrees, and now he's working on a Ph.D.! Dave Sullivan will be with us at reunion. He's Industrial sales manager of Du Pont's Fabric Division and shuttles back and forth between Wilmington and Bridgeport.

That's it for now. See many of you in another couple of weeks or so. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

Your Secretary, since the last Review report, has made a hurried visit to Tucson and Phoenix, Ariz., with a very brief stop in New Orleans. During this trip he had the opportunity to speak to several groups, including the M.I.T. Clubs at Phoenix and New Orleans. This, of course, gave the opportunity to talk with a number of M.I.T. Alumni and more particularly with two members of the Class of 1925. Harrison Browning, who had just returned to his home in Tucson after several weeks of business in Cleveland, Ohio, came to a meeting of research-minded businessmen in Tucson; and after listening to your Secretary deliver a talk on university research and the community, he spent a few minutes in personal discussion. In New Orleans, it was my pleasure to meet Leonard Connett. I had never before met Leonard, since his association with the Class of 1925 came about because of his taking graduate work with us; but only a couple of weeks before meeting him in New Orleans, I had received a copy of the *Jobber Journal*, published by Perfect Circle Corporation for the Automotive Parts Industry, which not only carried Leonard's picture on the cover but included an interesting article entitled "Southern Sportsman" which cited from the Nimrodian activities of our classmate. Connett is a proprietor of the Piston Ring Service Company of New Orleans and is currently marketing two products which he himself

has developed; and he is the holder of several patents.

Through the kindness of Mrs. Lynwood A. Tripp, IX-A, whom many of you will remember meeting at our 25th reunion, word comes through that Wilder E. Perkins, who has been assistant factory manager at the Raybestos-Manhattan, Inc., at Passaic, N.J., has been promoted to the position of manufacturing manager in charge of the Manhattan plant's V-belt, hose, platen, roll, tank, and blanket departments. Mrs. Tripp inquires regarding the 35th reunion plans, and it is hoped that all of you are planning for the 1960 event and that Henry McKenna will have more detailed information going out to you before too long.

If any of you happened to read the March 17, 1959, issue of the *Christian Science Monitor*, you saw the very fine article describing the J. W. Greer Company of Wilmington, Mass., which you probably recognized as the company which our good President Fred Greer heads up. He is serving as the chairman of the board, and his brother is the president. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

I am amazed to find how dependent I have become on Pigeon Cove for inspiration to write class notes. This week end we stayed home but finally decided to drive down for Sunday dinner at Oleana's, overlooking Rockport Harbor. We were surprised to find the restaurant full of people with cameras. One of them — the tour leader — was an old friend, and in a quick exchange of greetings she explained that the shutter-bugs were an M.I.T. group. They and we were fascinated to watch a skin diver operating from a small rowboat as we lunched.

The principal reason for driving out to Pigeon Cove was to pick up the clippings and letters I keep there for these notes. There were no letters and just a few clippings. This being the end of the season with one issue to go, it looks as though I must have made my requests for letters too mild. But we do have a few clippings and one death notice. The death notice is that of Carlos Arellano in March and comes from the Alumni Association reported by Association Executive Vice-president Lobby Lobdell. Presumably, Lobby picked up the information while at the M.I.T. fiesta in Mexico City, because that is where Carlos lived. We extend the sympathy of the Class to his family.

From time to time we have mentioned our ecclesiastical classmates, and I have been carrying a note around in my pocket for a year to remind me that some noontime I am to jump in the Volkswagen and run out to see classmate Monsignor Arthur J. Reilly, who has been located in Quincy for the past several years. I promise to do this before the next issue! What brought this up was a clipping from a Portland, Maine, newspaper about classmate Reverend Malcolm MacDuffie, who is pastor of the Congregational Church at Waterville, Maine. Malcolm was to be a panel member with a Catholic priest and a Jewish rabbi at a discussion in Waterville. The article mentioned that after

M.I.T. he was principal of the MacDuffie School in Springfield, Mass., after which he entered the Bangor Seminary and studied for the ministry. I am anxious to talk with Malcolm someday, too: it will be interesting to report to you from classmates who have chosen lives so different from the rest of us.

A news release from Wentworth Institute in Boston tells that classmate Lung Chang King has been appointed as an instructor in the Department of Electrical Engineering Technology to teach electronics. Lung was previously an electrical engineer with the firm of Jackson and Moreland. I forgot to mention in the notes several issues back that George Makaroff on his Christmas card sent a special greeting: "Best for '59 — a steady hand, a stout heart and no ill winds from the sea." Then as a little extra greeting, he added: "My prediction for 1959 — The Year of the CRISIS." I was left to draw my own conclusions as to the nature of the crisis, so I will leave you to draw yours, too. I am sure that was George's intention.

I'm not sure whether this issue will reach you before Alumni Day. However, by now you know that the big event this year is Dr. Julius Stratton's inauguration as President of the Institute on that day. I am sure that '26 as always will have a large representation, and I look forward to seeing you there! For those of you who cannot make it, I'll mention something to make you envy those of us who can. Arthur Fiedler and the Boston Pops Orchestra will again give a concert on the evening of Alumni Day in the Kresge Memorial Auditorium. Ruth and I have been fortunate enough to be able to attend each of the two previous Alumni Day concerts, and it is really the equivalent of a command performance for you alone. The design of the Auditorium gives you a front seat no matter where you are located, and the acoustics are perfect. I hope that you are among the fortunates who can be there; and if you are, I'll see you. Till next month, best wishes. — GEORGE WARREN SMITH, *Secretary*, c/o E. I. du Pont de Nemours and Company, 140 Federal Street, Boston 10, Mass.

1927

Here below is a goodly portion of a most interesting letter from Herbert M. Houghton. Bert now resides at 1141 Sydenham Road, Calgary, Alberta. "I left London and the employ of the Geophysical Prospecting Company in June of 1958 after I had stayed the year to which I had agreed. Our daughter joined us in London after completing her junior year at Stanford University, and we spent the next eight weeks touring the Continent in a little Vauxhall station wagon. Saw nearly everything from Spain to Norway and Sweden, though we only cut across one corner of the latter country. Drove 10,870 miles in all and spent several days on the Mediterranean coast of Spain, and a week in Copenhagen with two or three days in Paris, Geneva, Zurich, Vienna, Amsterdam, and Brussels.

"It was quite a contrast to our hurried trip of the summer of '57 when we spent three weeks in the central part of the Continent and drove a rented car 3800

miles; and for anyone who is contemplating a trip I would most wholeheartedly recommend not trying to see too much or drive too many miles in a hurry. A distance of 250 miles is just about maximum and will leave you pretty well worn out if you have many days like this in a row. Of course if an autobahn is available, the above does not apply; but in our case we wanted to take many side trips so that the express highways rarely filled our needs. As an example, our daughter wanted to see Stanford in Germany near Stuttgart; and friends we met in Benidorm, Spain, told us not to miss Rothenburg, the old walled city not far from Nuremberg. Both side trips were most delightful but took time that probably would not be available on a guided Coach Tour.

"There were lots of Americans over in Europe, and I am glad to say that many of the young couples who are there with the services are taking full advantage of their opportunities. Many parents are going over to visit their children and tour with them. [Here followed a series of questions as to how the French on the south side of the English Channel have been able to discover central heat while the British are still struggling with this problem. — Ed.] Saw quite a bit of North Africa (Morocco and Libya) on business trips, and this was most interesting. I was sorry that changes in business plans made it necessary to cancel trips to Turkey, Iraq, and the Lake Tchad country in French Equatorial Africa, but I spent nearly two weeks in Casablanca, Marrakech, Rabat, Meknes and on down to Ksar es Souk, south of both ranges of the Atlas Mountains.

"London proved to be quite a meeting place with calls from friends in the oil business in Canada, and one from Art Guise²⁷ and his wife. He located me through the U.S. Consulate where we had registered. While we had a telephone, it takes about two or three years to get a listing in the directories; and in fact, even to get a complete set of the four directories for my office took nearly six months, with the oldest one going back to 1953. Lobby gave me the address of Joe Voelcker²³ who had been active in the M.I.T. Club of London, and my wife and I enjoyed one dinner meeting at which wives were included. At that meeting I saw Harold Fisher for the first time since graduation. Since November, 1958, I have been back in Calgary and hope to stay here for a long time. You really appreciate getting back to your friends and to the standard of living of North America after you have been gone for a while."

The Standard Oil Company (New Jersey) announced recently that H. W. Fisher had been designated a candidate for election as a director at the annual meeting May 27. He joined Jersey Standard in 1927. Among other posts, he served as a director of the Esso Standard Oil Company and as president of Enjay Company, Inc., affiliates of Jersey Standard.

Henry G. Houghton (See May notes) has an article entitled "Cloud Physics" in the February 6, 1959, issue of *Science*.

W. Fitch Cheney, Jr., Professor of mathematics and chairman of the Department of Mathematics at Hillyer College,

was the speaker at the meeting of the Exchange Club on February 24, in Bolton, Conn. His subject was "Beyond the Milky Way." He has been a teaching fellow in mathematics at the University of California and has taught at the Hebbard School, Newton, Mass.; Tufts College in Medford, Mass.; and the University of Connecticut, where he was professor of mathematics and astronomy.

Arthur J. Reardon of the weapons and fire control branch of the Industrial Division of the Office, Chief of Army Ordnance, recently received an award for his 30 years of service as a civilian employee of the Department of the Army. The award was presented, during recent ceremonies at the Pentagon, by Major General John H. Hinrichs, Chief of Ordnance. More next time. — J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

1928

Jack Chamberlain (Dr. John W.) was married to Miss Dorothea Winifred Tasker on February 14, at Payson Park Congregational Church in Belmont, Mass. Bob Harris was best man. The bridal couple enjoyed a wedding trip in Florida and have since taken up residence at 39 Lawrence Lane, Lexington, Mass. Dorothea graduated from Kennett High School in Conway, N.H., and attended the New England Conservatory of Music. Jack studied in Course X, then went on to earn his M.D. at Harvard Medical School. He is now associate medical director of M.I.T. and chief of pediatric surgery of Boston City Hospital. He is on the staff of Mt. Auburn, Children's, Malden, and Lawrence Memorial Hospitals, and has written various papers on pediatric surgery. Jack and Dorothea, on behalf of the Class, we wish you a long and happy life together!

A very fine picture of Nathaniel Herbits appeared in the *Berkshire Eagle* (Pittsfield, Mass.) for January 13, with the explanation that he had been named a vice-chairman for the 1959 Pittsfield Community Fund drive. After graduation from Course XV, he studied law at Harvard and Boston University. He is a lawyer and insurance broker in Pittsfield.

A brief note from the *M.I.T. Observer*, February, 1959, issue informs us that Professor Robert S. Woodbury (Humanities Department) was elected treasurer of the year-old Society for the History of Technology.

Elbridge Atwood is also in the news. The following appeared in the *Patriot Ledger*, Quincy, Mass., February 6, 1959: "Elbridge Atwood is a life long resident of Abington, educated in the Abington schools and at Massachusetts Institute of Technology. Mr. Atwood's business career has been devoted entirely to planning. He is a partner in the firm of Aisner and Atwood, Boston, which recently planned the new Goddard Memorial Hospital in Stoughton and two latest additions at the South Shore Hospital." — GEORGE I. CHATFIELD, *Secretary*, 11 Winfield Avenue, Harrison, N.Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

Since my guess is that this will not reach you until after the reunion, it would be rather absurd to put in another pitch for the Bald Peak festivities. However, at this writing I hope we will see many of you there, and I am sure all who attend will enjoy themselves.

Some bits of news from around the circuit: from Hartford, Connecticut, news that Henry Giles has resigned as deputy public works director to accept a position with Henry Souther Engineering Company of that city. Henry has been plying his trade in the Public Works Department since 1953. Previous to this time he was assistant city engineer in Meriden, Conn., and was with the Connecticut State Department of Health as a sanitary engineer for 23 years. And word that John Happel is chairman of the Chemical Engineering Department at New York University. John was formerly with the Socony Mobil Oil Company and during World War II was a member of the Petroleum Industry War Council.

John Dreyer, who is president of Polacoat, Inc., gave a paper before the spring meeting of the Optical Society of America on the optical performance in rear projection screens.

Harry Finkel, who is presently in Holyoke, Mass., is reported to have developed a machine called Face-Tone which will produce a "Florida" tan in four short treatments. Apparently the machine is a controlled flash device giving off infrared and ultraviolet intermittently to produce the Florida effect. All you need is a pair of sun glasses and a couple of minutes of your time for four treatments; and it's far more economical, I am sure, than a trip to Florida in the winter. Harry is president of Shades, Inc., in Holyoke.

A release from the Atomic Energy Commission at Grand Junction, Colo., advised that Bill Hutchinson has been appointed director of the Source Material Procurement Division of the A.E.C. office in Grand Junction. As you know, Bill has been in the mining field in one way or another since he left M.I.T. in 1929. During the war Bill was principal engineer with the Metals Reserve Company and served two years as a Naval officer with the Seabees at Pearl Harbor and Guam. He has been at Grand Junction since 1949. Congratulations, Bill!

That's all for now. If this arrives before you take off for Bald Peak, we will see you there. Best of luck. — FISHER HILLS, Assistant Secretary, 62 Wittemore Avenue, Cambridge 40, Mass.

1930

We were all very pleased to hear that Charlie Abbott was elected a member of the board of directors of the New England Gas and Electric Association Service Corporation. Charlie has been associated with this corporation since 1930, and at the present time is serving as chief electrical engineer.

George Brady has been in touch with us. He is in the mechanical contracting business down in Austin, Texas (Brady

Associates, 402 West Sixth), where he is attempting to make an "east" wind blow through buildings when the temperature registers around 119° in the shade. To quote George, "I sure miss sailing at Marblehead, Mass., with Jack Wood '17."

John Cleary is still construction engineer for Anheuser-Busch, Inc., St. Louis, Mo.; has five daughters and one son-in-law; and expects to be a grandpa next September. In his note John quipped: "I work, go to church, and tease my wife."

On March 30 we received an interesting letter from Ben Hastings, who said he was writing at the suggestion of Allen Latham, Jr. Ben claims he was born with an itchy foot, but does enough traveling in his work to keep the itch down. He held several positions as construction engineer in many parts of the country until about four years ago when he joined the Pennzoil Division of the South Penn Oil Company in Oil City, Pa., feeling it was about time he settled down in one place. Ben is married and lives in Meadville, Pa.

Sid Kaye has been elected president of the board of directors by the trustees of the Parker Hill Medical Center here in Boston. He is also a trustee at the Beth Israel and Jewish Memorial Hospitals.

In the *Christian Science Monitor* last February there was an excellent article about H. Scott, Inc., of Maynard, Mass. The article said that the corporation had earned a world-wide reputation for the excellence of its products. "In fact," the article went on, "this name has become synonymous with quality in electronics not only among engineers, but also among the music-loving general public." Herm Scott is the company's president.

Last February we read in the *Stoneham* (Mass.) *Independent* that Susan (Murdock) Tully had been reappointed a trustee of the Metropolitan State Hospital at Waltham, Mass., a capacity in which she has served for the past 14 years. She has been chairman of its board of trustees, and currently is its secretary. For several years Susan served as health officer in the Malden public schools, from 1932 to 1946 she was director of health education for the city of Boston. She has done extensive volunteer work at the Children's Unit of the Metropolitan Hospital, was chairman of publicity for the friends of the Children's Unit in 1957 and 1958, and is its present vice-president. Changes in address which have been recently called to my attention are as follows: Joseph Becher, 49 Oak Ridge Lane, Watchung, N.J.; Carl F. Brauer, 242 Ridgeview Road, Princeton, N.J.; Mark C. Culbreath, 8611 Bellevue, Kansas City 14, Mo.; John A. Ginley, North Lewis Park Drive, East Walpole, Mass.; Alfredo G. Gutierrez, Condominio Yucatan Insurgentes Zacatecas 229, Mexico D. F., Mexico; Dr. Charles H. Lutz, United Aircraft Corporation, Missiles and Space Systems Division, East Hartford, Conn.; Louis C. Rubin, 46 Francisco Avenue, West Caldwell, N.J. — GEORGE P. WADSWORTH, Secretary, Room 2-285, Department of Mathematics, M.I.T., Cambridge 39, Mass. RALPH PETERS, Assistant Secretary, 249 Hollywood Avenue, Rochester 18, N.Y.

Headlines in the February 22 issue of the *Louisville Courier-Journal* stated: "General Person Hired to Run Sewer District. Ex-Engineer Chief Here, At \$20,000, Would Become Top-Paid Jefferson County Official." Jack Person, I, is presently a brigadier general in the Corps of Engineers serving as assistant chief of engineers for civil works in Washington. He was formerly district engineer of the Army Corps of Engineers in the Louisville District. Jack graduated from West Point in 1929 and came to M.I.T. for his civil engineering education. At the present time he supervises the spending of eight-hundred million dollars a year on public works throughout the United States. In his new position, which he will assume on July 15, he will have complete control over the Metropolitan Sewer District, which has accomplished a great deal in cleaning up the Ohio River since it was organized thirteen years ago in 1946.

Bennett Archambault, XV, has just been elected chairman of the board of Stewart-Warner Corporation. He will continue to hold his position as president and chairman of the executive committee of the corporation. Stuart R. Fleming, XVII, has been named manager of the engineering department of Ford, Bacon and Davis, Inc., of New York. This is in addition to his present responsibility as a vice-president of the Corporation. Jerry A. Cogan, X-A, has been elected to the board of directors of Esso Research and Engineering Company. This directorship is in addition to his position as a vice-president and a director of the Imperial Oil Company of Canada.

Rolf V. Wallin, X, has been appointed vice-president-engineering of the Union Carbide Chemicals Company, a division of the Union Carbide Corporation. Rolf has been director of engineering since 1956. Ralph D. Patch, X-A, formerly head of the Petroleum Products Division of the Baton Rouge Refinery of Esso Standard, has been promoted to regional co-ordinator in the Refining Co-ordination Department of Esso Standard Oil Company. He will serve as regional co-ordinator for refining for the eastern hemisphere. That will take him back to the Middle East where he lived as a child and later taught at the American University in Beirut, Lebanon.

Carl J. H. Wahlstrom, IX, writes of his activities as a regional vice-president of our Class. He has been trying to get a number of people together in the Texas area in order that interest in the Class may be maintained in accordance with the expressed wish of our classmates at the 25th reunion. All of you will recall that we appointed seven vice-presidents to serve on regional bases and to stimulate occasional get-togethers. They have started a program of annual meetings in the Houston area. It is hoped that other regions will also become active. We want to be sure of having the same breadth of interest in our 30th reunion as we had in our 25th. Please support your regional vice-presidents! — ROLF ELIASSEN, Secretary, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

First honors of the month go to Richard S. Morse, VI, who has just taken a step that represents real sacrifice on his part and at the same time will mean so much to the country. Dick has given up the presidency of the National Research Corporation here in Cambridge, a company he founded in 1940 and has successfully built to a position of national prominence, to become Director of Research and Development for the Army. With his energy, drive, enthusiasm and general savvy, we are sure Dick will make an indelible mark on the Washington scene — and all for the benefit of the U.S.A.

Man of the month honors also go to Richard Robinson, XV, who in February became president of the Massachusetts Broken Stone Company, purveyors of crushed stone and bituminous concrete, with headquarters in Weston. What's more, on July 2 last, Dick joined the ranks of grandfathers for the first time when his eldest daughter had a son, Andrew Forrest. Parenthetically — but still with a keen sense of appreciation — we recall Dick's thoughtful gift of a case of scotch at our 25th. An editor of the *New Yorker* could really spin a yarn about bituminous concrete, grandchildren, and scotch; we won't try. Let's dispense with the scotch by quipping that alcohol leads to nothing; ask any ice cube!

Of grandchildren, let me report that we, too, joined the ranks on April 9 when our eldest daughter brought forth Eric Kimball Jamieson. All is well; Dick Robinson joins me, I am sure, in the thought that neither of us feels a bit older as a result of reaching this milestone. If this appears boastful, we pause to salute all present and future grandfathers in the Class; just to make sure everyone is included, we will gladly and proudly salute all future fathers and mothers in the Class! But back to this bituminous concrete for a minute, with a word of advice to any eager do-it-yourselfer in the Class who may decide to repair the driveway: get a pair of heavy asbestos gloves and use your oldest rake to spread the bloomin' stuff. It is hot, heavy, and sticky. Yes, it's a wonderful and effective material, but strictly for the experts to handle. Just give Dick Robinson a call instead of trying to convince your family the hard way that your Tech education had its practical values.

Now that summer is upon us, how about taking a few minutes to let us know what you are up to and what you are thinking? The rest of the Class would be much interested to learn through the class notes. How about it, friend! — R. M. KIMBALL, *Secretary*, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

These notes are being prepared in the middle of April with the hope that you will read them at least a few days before the time of our 25th reunion, June 12 to 15. If you have not yet decided about coming to the reunion a telephone or telegram notice to Professor Joseph Bicknell, in Building 17, who is in charge of registrations, should obtain accommodations

for you and for your family. Your committee will be happy if you change your mind at this last minute and come to the reunion.

Our Class is again breaking tradition by encouraging the attendance of children at our reunion. It is admittedly a change in the M.I.T. reunion pattern and an experiment. The early response from our Class indicated a definite desire to have children, and we were amazed to have early indications of over 100 who hope to attend. There is one correction to previously sent publicity regarding the ages of children who can be accommodated. There were so few interested at ages eight and younger, that we have not made provisions for handling this youngest age group. The lowest age to be provided for will be those who were nine by January 1, 1959. We expect that there will be three groupings for the children: a junior group, ages 9 through 12; an intermediate group, ages 13, 14, 15; and a senior group, 16 and over. The senior group will have chaperones and the intermediate and junior groups counselor supervision. Their programs will be substantially separate from the programs of the classmates and wives.

Classmates not attending the reunion who wish to purchase a copy of the class history may do so by writing to your reunion committee, Building 17, M.I.T., Cambridge 39, Mass. The cost should be in the vicinity of \$6.00 per copy, and it looks now as if it will have at least 400 classmates' histories together with many pictures.

Our classmates are active in guiding public education in the communities where they live. Leland S. Person, of Ware, Mass., was elected in March to the school committee, and I was re-elected to the school committee in North Reading, Mass.

Ed Sylvester was the principal banquet speaker at this spring's Case Institute of Technology Research Day, when he spoke on "Research in Basic Industry."

M. Scott Dixon, an engineer of the Industrial Division of W. and L. E. Gurley since 1954, was recently elected vice-president of the firm. He is a West Point graduate Class of 1931, and did graduate work at the Institute. Prior to joining the Gurley Company, Mr. Dixon had been associate professor at West Point, serving in the Department of Military Topography and Graphics. He held the rank of colonel. — MALCOLM S. STEVENS, *Secretaries*: WALTER MCKAY, Room 33-217, M.I.T.; MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass.; JOHN A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, University Circle, Cleveland 6, Ohio.

1935

You have probably read in Jack Colby's president's letter that Walter Stockmayer has been appointed general chairman of our 25th reunion and that the plan is to send first notices of the reunion next September. The solicitation drive of our gift committee will be in full force from now on. The drive is going well, but participation is at a very low percentage. If you have given yourself, make it a point to get at least one more member to make a con-

tribution. Leo Beckwith is now chairman of solicitation in the Boston area.

I received a letter from Hamilton (Ham) H. Dow, who has been working with General Electric's Knolls Atomic Power Laboratory at Schenectady, N.Y., and who is now in charge of their field office at Bethlehem Ship Yard in Quincy, Mass. He tells me that his oldest daughter, Jocelyn, was married last Christmas to an M.I.T. graduate student, Eugene C. Loh, who is seeking his doctorate in particle physics. Congratulations from the Class. Ham hopes to renew friendships with Al McDonald, Clarence Goldthwaite, Albie Fletcher, George Forsburg, and others.

Bernie Nelson informed me of the death of Ian McFadyen, who passed away after several weeks' illness. It is also with sadness I record the passing of Livingston Eric Jones last February.

Our Frank Sellow of the firm of Smith and Sellow was selected from a list of 20 architects to design a new church and religious educational buildings for Christ Church in Hamilton, Mass. Charles W. Smith was recently appointed chief staff engineer of Esso Research and Engineering Company. He lives at 1216 Watchung Avenue, Plainfield, N.J. Constantin A. Pertzoff was recently a candidate for election to the planning board in Lincoln, Mass. At this time I do not know whether he was elected or not, but I do know that the citizens of Lincoln are missing the boat if they did not elect him.

Make your plans for the 25th reunion in June, 1960, now. — FRANCIS W. MULDOWNEY, JR., *Secretary*, 1109 Boylston Street, Chestnut Hill 67, Mass.

1936

The group around Manhattan arranged to get together to welcome Brent Lowe to the island. He was to stop in Detroit and pick up a car, then go on to New York City. Brent apparently spent too much time dickering over prices together with a side jaunt up to Bloomfield Hills, Mich., to visit with Henry Johnson; he didn't make it in time for the luncheon. However, Mal Graves, Pat Patterson, Jack Austin, Tony Hittl, and Yours Truly had a wonderful get-together and cussed out those who didn't make an appearance. The "no show" group comprised: Joe Burns, Gordon Thomas, Fletch Thornton, and Harry Hazelton. Gordon and Fletch did come up with reasonable excuses — they were called out of town.

Brent eventually arrived, in his new block-long Cadillac; and a few hurried phone calls were made in an effort to get the gang together again. Tony Hittl's secretary did a terrific job, but the short notice cramped her style. Besides Brent there were Dave Werblin, who is a vice-president with Griffin Wellpoint Corporation of N.Y.C. and is living at 735 Kappock Street, New York 63, N.Y.; Tony Hittl; Jack Austin; and your Scribe. We spent a very enjoyable two and a half hours talking and listening to Brent tell us of his travels half way around the world and his adventures in various interesting spots. He is headed back to his investment business on the West Coast but already has plans for a trip to Europe. In his travels he investigates companies, indus-

tries, and the now all-popular special situations. Should you want some firsthand information on what to do with that gold you have buried out in back of the house, just drop Brent a line at P.O. Box 257, La Jolla, Calif.

Received a nice letter from Frank Parker recently. He has been elected a director of Charles T. Main, Inc., Boston, Mass. Frank went with this consulting engineering firm from school and has been with it ever since, except for four years during World War II. Frank writes: "We do design and supervision of construction of quite a wide variety of industrial and utility work; there was a flattering spread about the company in the *Engineering News Record* several months ago. Associated with our company are Warren Dannenberg, VI, and Dick Patterson, VI, and a number of representatives of other (and therefore less) distinguished classes at the Institute.

"My oldest son is at Wesleyan University and my daughter is at Sweet Briar College; the two younger boys are in Wellesley High School and Junior High — so you can see, I never left home. Just to complete the educational report, my wife is working for her master's degree in education at Boston University and hopes to go into teaching next fall.

"Over the past few years, one of my principal avocational efforts has been the step-by-step construction of a house on a hillside in southern New Hampshire. However, with the onset of the feverish bout of collegiate education by which I am now surrounded, progress has slowed — for more reasons than one! I look ahead to calmer days, but must admit I enjoy most of those I now have." Frank's address is 45 Glen Road, Wellesley Hills 82, Mass.

Charlie Prince's new address is 19 Winter Street, Keene, N.H. Ben Fogler is now located at 20 Meriam Street, Lexington 73, Mass. Ray Woodrow has moved to 17 (R.F.D. Box 11) Rosedale Road, Princeton, N.J. John Stapler is now located in Buffalo, N.Y.: 130 Ruskin Road. Gordon Donnan's new address is 25 Indigo Dam Road, Warwick, Va. — JIM LEARY, *Secretary*, One Putnam Park, Greenwich, Conn.

1937

Dave Fulton writes: "Since I have made a major change I would like to bring you up to date on my activities since leaving the Institute. After 20 years with the Lummus Company I left last July to take the position of general sales manager for the Chemical Construction Corporation of New York. We are active in the design and construction of chemical and petrochemical plants around the world; at present we are engaged in construction of plants, mainly in the nitrogenous fertilizer field, in such far-flung places as Japan, Pakistan, France, and many locations in Canada and the U.S. While with Lummus I had the pleasure of spending five years in Paris, France; two years in Montreal; and traveled a good deal in all of western Europe and most of South America. Although my present job has kept me in this country most of the time, I am looking forward to occasional visits abroad and am convinced that our company, as well as most major American concerns, will

find an ever increasing percentage of our business outside our borders. My wife, June, and I adopted a baby boy, Todd, who is now four years old and well able to outlast his Dad in wrestling matches." A good report, Dave, that brings us up to date. The Fultons' present address is 130 Lawn Terrace, Mamaroneck, N.J.

Congratulations to Frank Kowalski, Jr., who was elected congressman-at-large from Connecticut in the November, 1958, elections. This spring Len Seder is presenting a series of lectures at Northeastern University sponsored by the American Society for Quality Control, featuring the theme, "Thinking Tools for Today's Engineers." Karl P. Goodwin, Vice-president of the Acushnet Process Company, New Bedford, Mass., has just been elected a director of the Massachusetts Blue Cross. Karl is also a director of the Greater New Bedford Community Fund; trustee of the New Bedford Five Cents Savings Bank and the Friends Academy; and president of the Wamsutta Club in New Bedford. Walter Kozak spoke on "Creative Thinking" at a recent meeting of the Industrial Management Club in Newburyport, Mass. Walter is with the General Electric Company. Mrs. Nancy Klock gave an account of her African safari in the auditorium at Hillyer College, of the University of Hartford. Nancy, her husband Felix, and their three sons made the trip through central and eastern Africa. Nancy has been teaching at the University of Hartford since last fall. Leo Moore has been awarded the grade of fellow in the Standards Engineers Society. The award was presented by the Standards Engineers Society President, Herbert G. Arlt, in January, 1959.

John Nugent reports: "No wife yet, but a new boat — 55 Chris Craft Sea Skiff, the *West Wind*, 30 feet, twin screw. She is presently in Osterville, where we should have a 'time' in '62." Especially, John, if you have the boat still in Osterville in 1962. Bill Burnet is the director of engineering at Strong Scott Manufacturing Company. Al Wynot is president and treasurer of A. F. Underhill, Inc., Cambridge, Mass. He and his wife, Dorothy, are moving to 15 Westdale Road, Canton, Mass., in June. Paul Vogel was treasurer of the Underwood Corporation, New York City, and has recently been advanced to comptroller. Evans A. Edwards has just started a one-year assignment on the business dynamic research committee of Eastman Kodak Company.

Our Class Treasurer, Joe Heal, reports on the status of our class gift program as of the end of February, 1959: "We have done better this year with the gifts up to \$18,850, through February. By the end of June (the end of the current fund year), we hope to be up to \$25,000. In analyzing the gift results the disturbing element is the small per cent of the Class contributing. The many are leaving it up to 20 per cent of the active class role to carry the ball. Most of the people in the 20 per cent also belong to the class insurance program. Here is how the gifts break down for this current year: 2 gave \$8,000; 3 gave 3,500; 5 gave 2,748; 5 gave 1,250; 8 gave 1,200; 15 gave 766; and 82 gave 1,386. A total of 120 giving \$18,850. Note: Our active class roll is 576. With some classes participating over 50 per

cent, it doesn't seem right for our Class to be in the neighborhood of 20 per cent, particularly when we are collecting for our 25th reunion gift. How about it? Send in your check now. Let's get behind our class gift program and make it something to be proud of." There is still time to get in under the wire for this year, as the closing date is the end of June.

To our list of those planning to attend our 25th reunion we add the following: John Nugent, Bill Burnet, Paul Vogel, Evan Edwards, Melville Hitchcock, Jervis Webb, Dave Fulton, John Fellouris, Albert Wynot, and Bill Bergen. At the present time 35 members of our Class have stated that they are planning to attend our 25th reunion. Add their families to the number and it looks like the best reunion ever. The sooner you signify your intentions, the more data will be available to make plans so that our 25th will be an event to remember. We hope to see many of you at Alumni Day this month, as quite a number have signified that they will be there. — ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford 55, Mass. S. CURTIS POWELL, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge 39, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N.J.

1938

First, we have to report notice of the death of Dr. Robert V. Lukes. Unfortunately, I cannot say more this month.

From Bert Grosselfinger I have a card stating that he took advantage of the long European Easter holiday to take time from business in Germany and to revisit Rome and Naples. A brief item tells us that Oskar Kanter has been named a director of the Beverly (Mass.) Trust Company. He is associated with the American Seltzer Company, Inc., and the Kanter Realty Trust. He is also a member of the mayor's industrial commission. Another item announces that Dave Wright, President of National Marine Service, Inc., has been elected chairman of the board of directors of the American Waterways Operators, Inc. He is also president of the New York State Waterways Association, a director of the Mississippi Valley Improvement Association, and a member of the steering committee of the waterway panel of the Transportation Association of America.

The *Boston Traveler* recently contained an article about Telechrome Manufacturing Company of Amityville, N.Y. This company, of which Ray Popkin-Clurman is the president, is claimed to be the only company other than Radio Corporation of America, currently active in the production of color television. Even in this case the company produces specialty equipment in a price range above that of interest to the average consumer. Lloyd Bergeson was recently a speaker before the Norwich, Conn., chapter of the National Association of Accountants. Lloyd is manager of manufacturing services at the Electric Boat Division, General Dynamics Corporation. His topic was "The Methods of Production Control."

Don Severance writes that on a recent trip he "ran into Joe Kotanchik and Chuck Donlan, both at the National Aeronautics

and Space Administration facility at Langley Field. Joe, recently elected treasurer of the M.I.T. Club of the Virginia Peninsula (Newport News), has gained a name for himself for his fine work in ultra-high-temperature alternating-current arc jets. His positions: assistant to the division chief and head of the Special Projects Branch of the Structures Research Division at N.A.S.A. Chuck has recently been made assistant director of Project Mercury of the N.A.S.A., our country's first project for manned space flight. So when you read in the press of the problems of selecting and training men for these first flights and the problems of getting them safely back from orbiting in space, think back to when our classmate, Chuck Donlan, had no idea of the responsibilities that would be resting on his shoulders before we saw our 25th reunion. Before a dinner meeting with a group of Alumni in the Greensboro, N.C., area, some of us met at the lovely home of Art Tingley. Art is with the Madison Throwing Company, has two children, and is currently building a new home to get the additional space he needs. The other two '38 men at this dinner meeting were Russell Omdahl, who is with Western Electric Company working on manufacturing development, and John Withers, who is with Morton-Withers Chemical Company." — DAVID E. ACKER, *Secretary*, Arthur D. Little, Inc., 35 Acorn Park, Cambridge, Mass.

1939

Doc Wingard leads off the news this time with word that our 20th reunion will be held June 12 to 14 at Snow Inn, Harwichport, Mass. The place is the same as that used for our 15th reunion, but Doc says there will be no rolling this time on the bounding main. All those who care to roll will take off their sea togs, substitute in lieu thereof cleats if available, and can then roll on the green — the bowling green, that is. Doc says there is a brand new bowling green. And I have therefore asked Fred Cooke to practice "Roll-a Bowl-a Ball-a Penny a Pitch"; and those who can't bowl will sing, and those who can't do either may join one another where the libations are dispensed.

Doc says Bob Casselman is handling the publicity and Fred Grant is pitching in with help. Also said that Ernie Kaswell had volunteered to help along. Oz Stewart did a large amount of work on the 15th; but now he will have to do his helping from 200 miles away because he lives these days at Darien, Conn.

On the personal side, Doc says he has changed duties within his company and is on research now. And on the home front Doc says his two-year-old son, Joseph, is doing all he can to keep the Old Man from getting old.

On a recent trip north I spoke with Harold Goodheim, who is living in San Mateo, Calif., and who is an importer and exporter. Understand Harold is wheeling a dealing with the Orient these days, so all you guys who want teak and all you gals who want jade will know whom to see. And as a bonus with all new business, Harold promises to give you his best prediction on what will be next in "Terry and the Pirates."

H. P. Pacini has been named staff consultant to the Research and Development Division, Allen B. Du Mont Laboratories. Bert's new job will enable him to work on radar communications systems and special purpose display devices. Bert holds a number of patents on electrostatic and magnetic deflection circuits and antenna control systems.

John W. Pocock has been elected chairman of the executive committee and will be chief executive of Booz, Allen Applied Research, Inc. One of Bill's jobs will be to predict the nation's total air traffic 20 years in the future. To get an idea of the magnitude of this assignment just try on any Friday to get a flight out of Chicago to Los Angeles!

Herb F. Stewart, owner of Reed Manufacturing Company, recently made headlines when he said, and was quoted in the *Boston Herald*: "I don't want customers. I want good machinists." Herb, such talk is heresy to us peddlers; but sometimes when quality control in produced products has been a bit off, we'd agree you have a point there.

Bill Carlisle has been appointed executive vice-president of H. L. Yoh Company, industrial consultants. Bill will be responsible for the company's engineering activities in the eastern, central, and western divisions, including 10 branch offices.

Wayne Holman, Jr., chairman of the Chicopee Manufacturing Corporation, has been elected to the New York University board of trustees. Congratulations, Wayne, and we hope your new duties will not cause you to let up when it comes time to help M.I.T. along with its fund drives.

For those of the Class of '40 who read these notes, and those in '39 who know him, I can report that Charles Godfrey '40, who is with the University of California Radiation Laboratory at Livermore, is busy as ever traveling across the country on the classified business of his employer, and that Charlie will be going to France and Germany in April to participate in some North Atlantic Treaty Organization maneuvers. These notes are written from Livermore on a Sunday afternoon; and I must say that Charlie maneuvers really well in this small town. Yesterday part of the program included a junket to Oakland in his Triumph sports car, a tour through a local winery (with free samples in the Hospitality House, of course), swimming in a nearby pool, and a tour around the countryside in a private plane. With operational talents such as these and a visit in the offing to places overseas which have probably not changed much since we were there some years ago, I expect Charlie will be maneuvering again. After he comes back we'll try to dig out a full report; and the part which is not classified may eventually find its place either here or in the notes of the Class of '40.

This is probably the last column of notes before reunion. To help Doc, Bob, Fred, Ernie, and the others along most, please be prompt — extra prompt, that is — to let them know what to plan for you at Snow Inn. Incidentally, if you can do this I'm sure the management will have enough steaks for all and that you'll have the best time, too. — HAL SEYKOTA, *Assistant Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

1940

Your Secretary has just received belated notice of the death of Arthur McCabe in June of 1957.

I received a letter from Fred Hammesfahr, who is now with Pittsburgh Consolidation Coal Company. I have extracted portions as follows: "I kept the pleasant little note you put on the bottom of the Fund letter in October as a reminder that I really should write. As you can see, I put it off successfully for quite some time; but I do enjoy the Class Notes, and so I guess I really should write."

"We've been in Pittsburgh three or four years now. We have a two-story colonial in Mt. Lebanon, about 10 miles south of town, and are very happy with the whole place. Our particular section is relatively new; I think we were the first to move in on the street. However, by now shrubs, trees, and so forth are all in and the place looks quite established."

"We have three boys: eight, four and a half, and nine months. The oldest is now getting French in school, and I can report that once again I'm having trouble with languages!"

"My work involves a lot of traveling. I seem to hit every industrial state east of the Mississippi — and quite a few on the far side. I practically commute to New York, Chicago, and Cleveland and have been as far afield recently as California. With all the traveling, however, I haven't seen too many of our classmates. Here in Pittsburgh I see Ernie Ohsol '39 and Hank Avery '41 reasonably often, and of course John Phinney '38 of our own company."

Joe Libsch, who is now a professor of metallurgy at Lehigh University, received the Stoughton Award of the Lehigh Valley chapter of the American Society for Metals for his contributions to the field of metallurgy.

Peter Colmar, who has advanced to the position of rear-admiral, recently assumed command of the Fifth Coast Guard District with headquarters in Norfolk, Va.

Our latest entry in the field of politics is Wally Schuchard who is running for school committeeman in Hingham, Mass. The Review goes to press too early to announce the results of this race, but good luck to you, Wally. — ALVIN GUTTAG, *Secretary*, Cushman, Darby, and Cushman, American Security Building, Washington 5, D. C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, Room 16-325, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

Dues are due; for the small sum of two dollars from each of us, the class treasury can be bolstered for forthcoming activities. Send yours now, before the money burns a hole in your pocket.

Once again, the traditional spring reunion was held at the Faculty Club in Cambridge on April 3. Starting with a cocktail hour, the affair featured a choice of roast beef or lobster for dinner. Unfortunately, attendance by the Collinses was ruled out this year by the distance and by the six-day-a-week schedule we're hold-

ing to on the Polaris program. We're looking for a detailed description from those able to attend.

The Rensselaer Polytechnic Institute *Alumni News* provides a biographical sketch of Rogers Finch, in covering his appointment as associate dean of the School of Science: "Dr. Finch had been assistant professor of textile technology and director of the Slater Memorial Textile Research Laboratory at M.I.T. for several years. He was on leave of absence from January, 1953, to June, 1954, as deputy director of the Technical Co-operation Administration mission in Burma, and director of the Foreign Operations Administration mission which succeeded the T.C.A. During the war, he was a major in the Quartermaster Corps, serving as director of heavy textile research and development."

Everet Minett has been named chief engineer, commercial engineering, of the Remington Rand Univac Division of the Sperry Rand Corporation in Philadelphia. For the previous 10 years he had been with the Radio Corporation of America, serving as manager of product planning for the "Bizmac" project, and manager of airborne weapon system projects. In this capacity, he managed the ASTRA integrated electronic system for the R.C.A.F. "Arrow" interceptor, directing and having responsibility for engineering and financial and production planning. Prior to this, he spent five years on the Manhattan Project at New York and Oak Ridge. He is married and has five children.

Lowell Fellingner has been appointed an assistant director of the engineering department of Monsanto Chemical Company's Organic Chemicals Division at St. Louis, after serving as an assistant director of research in that division.

Lawrence Reeve has recently purchased the Goodall-Sanford Mills properties in Sanford, Maine. He is an officer and principal owner of the Seamloc Carpet Company in Sanford, as well as an officer and director of several real estate developments.

Leona Norman Zarsky spoke on "New Hope for Ailing Hearts" at the spring meeting of the Malden, Mass., branch of the Beth Israel Hospital Women's Auxiliary. Leona is a research fellow in medical research at Beth Israel and a research associate in the Department of Medicine at Harvard Medical School, and has written several articles on surgery of the heart.

Speaking at a conference on space law and sociology of the American Rocket Society in New York, Ted Walkowicz said that incentives for explorers have deteriorated since Columbus' time, when the explorer was offered shares in the wealth from his discoveries, and also in the findings of subsequent expeditions. Ted's suggestion is that Congress offer a tax-free prize of \$1,000,000 for the first expedition to land on the moon. Any takers?

Also on the speakers' platform was Austin Fisher, who addressed a large group of high school and college students on "Keeping a Man Alive in Space." The occasion was a "Conquest of Space" conference presented by the student union of Northeastern University. Dr. Fisher is presently senior chemical engineer in the

Research and Development Division of Arthur D. Little, Inc., in Cambridge. He has been with the firm since 1946. Orison Pratt and Donald Kitchin'19 are the authors of a paper on "Treeing in Polyethylene as a prelude to Breakdown," which won first prize in the science and electronics division of a contest held by the American Institute of Electrical Engineers. Rand McNally, of the Oak Ridge National Laboratory, was one of the authors of a paper on "The Spectroscopy of a Thermonuclear System Component—the Magnetically Confined, High Current, Vacuum Carbon Arc," which was presented at the spring meeting of the Optical Society of America. Charles Wyckoff was elected to the Needham, Mass., school committee in March. He is associated with the Boston firm of Edgerton, Germeshausen, and Grier, Inc.—IVOR W. COLLINS, Jr., Secretary, 9 Sunnyside Drive, Dalton, Mass. HENRY AVERY, Assistant Secretary, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

From a follow-up letter from Norman P. Pinto we have gathered the following interesting information: "I am in charge of the Beryllium Corporation's Nuclear Division, which includes the plant referred to previously, where we produce one-half of the country's beryllium. The plant processes beryllium from ore to finished machine parts. I am also a member of Rotary, the Chamber of Commerce, and the Industrial Council. Shirl, the three children, and I have a 130-acre farm near Allentown, where I breed registered Angus cattle. In addition we have five horses and ponies and are starting to breed hunters. My trips back to the Institute are so infrequent that there seems to be a new building each time. If it were not for The Review keeping us abreast of the school and of the Class, most of us would become strangers again." The address on Norm's stationery is Ashbryn Farms, Barto, Pa.

Jon Noyes called while on a family and business visit to Boston recently. We are pleased to report that he moved to Corpus Christi, Texas, six months ago and opened the investment banking firm of Porter-Noyes, Inc. Jon is president of the second locally owned investment house in this rapidly growing city of 200,000 people. It is a very pretty city located admirably for sailing folk right on the Gulf Coast. It already has six major oil refineries, and plants of Reynolds Metals and Celanese Corporation, and it is rapidly acquiring additional new industries. A conservative estimate is that within 15 years Corpus Christi will be the third largest city in Texas. Jon has continued the M.I.T. Educational Council and Alumni Fund regional solicitation work that he previously handled in San Antonio.

Revlon, Inc., has announced the appointment of Harvey Kram as operations consultant to the president. He will serve in an advisory capacity to Mr. Charles Revson on all matters pertaining to operations, manufacturing, and purchasing. Your Secretary can attest to the elegant decor and magnificent panorama of New York that are part of Harvey's office. Pre-

vious to this, Harvey was director of manufacturing for Leviton Manufacturing Company, and before that he was with the A. E. Laboratories, Burchell Products, Inc., and A. S. Campbell Company.

Robert W. King has been named director of engineering for the Union Carbide Chemicals Company. He joined Carbide's Engineering Department in 1942 after receiving his master of science degree in chemical engineering with us. Mr. King received his B.S. from the University of Denver. In his new assignment Mr. King will be located at Carbide's new technical center in South Charleston, W.Va.

A note from Robert H. Given tells us that he continues to be very active in the wholesale hardware business in El Paso, Texas. Class members and other Alumni of our vintage are invited to call on Bob at the Zork Hardware Company whenever they "drop around to the second largest state in the Union."

Jack R. Williams has left turbulent Cuba and peaceful New Jersey to take up his new appointment as general European manager for the six associated European companies of the Worthington Corporation. His headquarters will be in Paris.

Luther Davis, Jr., has recently been appointed assistant manager in the Research Division of the Raytheon Manufacturing Company. He will continue to manage the solid state physics group and, in addition, will plan and co-ordinate other research projects. Luther joined the M.I.T. Radiation Laboratory after graduation and then returned for his Ph.D. in physics in 1949. He is a member of the American Physical Society and Institute of Radio Engineers.

William G. Denhard, a specialist in servo systems and complex instrumentation, recently gave a talk on the subject "Space Age" at the Church of the Good Shepherd in Lawrence, Mass. M.I.T. runs a house organ for its staff, known as *Tech Talk*. An item in a recent issue is about Jose A. Garnier-Simoes of Brazil. Mr. Garnier-Simoes, presently working for the Brazilian equivalent of the Atomic Energy Commission, was the first citizen of Brazil to set foot on M.I.T. soil back in 1939. He is temporarily back at the Institute taking refresher courses in nuclear propulsion.

We are very much saddened to report the death of Casimir T. Wittl, who was most recently a resident of Tallmadge, Ohio. Edward A. Boyd has recently been promoted to lieutenant commander, U.S. Navy, and has transferred from Brunswick, Maine, to Alexandria, Va.

New positions overseas have been quite frequent of late. James M. Beall is with the U.S.O.A.M. in La Paz, Bolivia. Mrs. Lisa M. Finney has closed up her home in the Netherlands and moved to Sausalito, Calif. David R. Lawler has given up Honolulu to join the operations office in Bethesda, Md. Duncan C. Purcell has left Frankfurt, Germany for Washington, D.C. Robert J. Sollenberger is now in Puerto Rico for Union Carbide Chemical Company.

Among the transcontinental travelers are Graham H. Bell, now in Tustin, Calif., and Robert T. Benware in Los Altos, Calif. We note that moves in the opposite

direction have been made by Herman R. Lorence from Palos Verdes Estates, Calif., to Niagara Falls, and Francis G. Miller from San Francisco to Springfield, Va.

Other changes of address have been reported only with a change of state. This is manifestly unfair to Texans, who can change their residence by a thousand miles and still not be recorded in this last paragraph. Please accept our humble apologies for not being as familiar with the distances in Texas as we are with the buoy marking off Marblehead. Among the recently relocated are William I. Crooker to Hanover, N.H.; William S. Haddock, Jr., to Mentor, Ohio; Milton Kaplow to the General Foods Research Center in Tarrytown, N.Y.; Benjamin S. Kingsbury to St. Clair, Mich.; and Lieutenant Colonel John W. Kodis to the Sandia Base in Albuquerque, N.M. Captain (and Doctor) Richard S. Malone is now with the 4021st U.S. Air Force Hospital at the Dyess Air Force Base, Texas; Carl R. Meurk is now in Bellevue, Wash.; Bruce Oakley is in Louisville, Ky.; Major Roger H. Olson in Hampton, Va.; Wendell E. Phillips, Jr., in Weston, Mass.; Jack L. Schultz in Scotch Plains, N.J.; Dr. John S. Stewart, Jr., in Danville, Pa.; George R. Urquhart, Jr., in Bloomfield, Conn.; Edward O. Vetter in Attleboro, Mass.; Robert E. Wagner in Clairmont, Del.; and Baker B. Williams with the Weather Department at the Municipal Airport at Huntsville, Ala.

Good wishes for good golf from ED EDMUNDS, J. J. QUINN, BOB KEATING, and LOU ROSENBLUM, 49 Farnham Street, Belmont 78, Mass.

2—'44

At about the time that you are reading this, you will have already made your plans to come to the reunion at the Chatham Bars Inn, Chatham on Cape Cod. For any of you who may make up your mind at the last minute, the festivities start Friday afternoon, June 12, and go through the clambake, Sunday, June 14. I find that you should plan two and a half hours of driving from Boston, and that for those who don't have a car available there is train service.

A meeting of the reunion committee was held at the Faculty Club at the Institute Tuesday, April 7. It is amazing how many men are putting in time for the various activities required. To give these men credit for their time, here are the names and activities: Bob Breck, publicity and author of *Old Salt*; Mal Kispert, treasurer; Scott Carpenter, program and cochairman; Burt Bromfield, chairman until April 7; Walter Gray, cocktails (I don't really know what it is about, but results should be excellent.); Lou Demarkles, purchasing agent—no class reunion should be without one! John Granlund, Tech dinghies, was given a budget of \$4.99 to haul the boats down to Chatham and back. Bud Bryant will be the new reunion chairman. Paul Heilman will take care of registration and transportation.

In connection with transportation, if you will give me a call at Cedar 5-4300 in Boston during the day, or give Burt Bromfield's number a call at night, we will have the information on transportation to

Chatham, and may be able to set up a limited car pool.

This Assistant Secretary surely would like to hear from some of you. It appears you are all too busy with your local activities to let us in on your interesting doings. I now have an address in Boston; it will be Weston Instruments, 66 Central Street, Wellesley, Mass.—PAUL HEILMAN, *Assistant Secretary*, Weston Instruments, 66 Central Street, Wellesley, Mass.

1945

It is difficult to believe but a year from now we shall be celebrating our 15th reunion down on little old Cape Cod or the Connecticut shores. Tentative plans call for a gala week end to be had by one and all June 10 to 12 at Harwichport, Mass., or Mystic, Conn.

Your reunion committee held its first meeting at the M.I.T. Faculty Club on Tuesday, March 31. Jerry Quinnan and Bill McKay have agreed to be cochairmen, with Bill primarily responsible for the financial aspects and Jerry in charge of program and publicity. George McKewen and Dave Flood will lend a helping hand to finance while Prexy Dave Trageser, Chick Street, and myself plan to help Jerry with the publicity and advance planning. Bill Meade and Bill Shuman will be adding their weight wherever needed. The committee not only needs but also wants your help; and when I say "your help" I mean that of each and every one of you. We need ideas and regional contact people. All of you anxious to help, please drop me or one of the others a card or letter. The first reunion mailing shall be in the fall; although our 15th is still a year away it is none too early to plan and arrange for that needed sifter!

Fran and I had a most pleasant luncheon in New York with Tom and Jim Stephenson and Jim and Ellen Brayton last Friday, April 10. Tom and Jimmie were in New York for a few days ostensibly to meet Jim's mother returning from a world cruise. Steve's bride is quite a gal, and if she has done nothing else she has cut Steve's caloric intake! He has lost at least 10 pounds since we last saw him. Steve is assistant plant engineer at ALCOA's New Kensington plant outside of Pittsburgh. As you might expect Jim and Tom were planning to stop at Pete and Lou Hickey's in Moorestown, N.J., on the return trip home; we trust it was a mild week end!

Although Jim and Ellen only live up the Connecticut shore some 12 or 15 miles, last Friday was the first time Fran and I had seen them since Lenox in '55; I have seen Jim occasionally in Grand Central. Jim is still purchasing for Turner Construction Company with headquarters in the Socony, Mobil Building in New York. Not only did we see pictures of the Brayton children but also the Brayton yacht. Yes, Jim and Ellen have a 30-foot motor sailer in constant use during the summer months. To prove how small a city even New York can be, who should come in to eat in the same restaurant but Al Oxenham. Steve had seen Al in their own Pittsburgh area within the past couple of weeks. Although busy impressing a client Al did report that he had spent a couple

of days with Bob Symonette while in Nassau the previous week.

Last week's mail brought a most pleasant letter from the Pacific Northwest and one Clarence (Red) Howell of Course XVI and Theta Delt fame! Red says that there are several classmates all at Boeing: Bob Hildebrand, Otto Kirchner '49, and George Dvorak. Kirk Drumheller passes through the Seattle area at regular intervals. Red indicates difficulty with class affiliations or associations since he eventually graduated with the Class of '48 and then went to graduate school for a couple of years, finishing that stint with '51. Red married a Simmons girl in '49 and they have a six-year-old son. The Howells visited with Nick and Rosemary Mumford some years ago but are in constant touch through correspondence.

We recently received a letter from Jack de Vries' mother in Rochester, N.Y. Jack left us the end of our freshman year for the Army and, believe it or not, is still with them—now a "leaf" colonel finishing a 22-week course at the Armed Forces Staff College. From what I can gather Jack played a most important part in the atom and hydrogen bomb tests both in Nevada and the Pacific. Just about a year ago Jack had the good fortune to detonate an H-bomb from an airplane over the Nevada flats. All in all it appears to be quite a life for a fellow who wants to return to Tech for a degree once his 20 or 30 years are up.

I suspect this will be our last issue for the academic year 1959. In return for our wishing you and your families a most pleasant summer, how about making ours a refreshing autumn by forwarding us some news? See you all later.—C. H. SPRINGER, *Secretary*, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N.Y.

1946

Ken Mathews is getting to be an expert on missiles in his job as engineering specialist for Sylvania Electronics Systems of Waltham, Mass. He proved it by giving a talk last February to the Kiwanis Club of Newburyport, Mass., on the subject of "Interpreting News Reports on Missiles and Space Flights." He has lost his expertness at squash, however. Ken and I used to have a weekly match, but since he got married (he now has two children) I've had to find another opponent. The Mathews family can be found at 19 Pequot Road, Wayland, Mass. Robert E. Meyer (A.B. at Harvard, S.M. at M.I.T., and LL.B. at Northeastern) is a patent counsel for the Dewey and Almy Chemical Company. He is married, has one child, and lives at 55 Williams Road, Lexington, Mass. Bob is active in town affairs, serving as member of the Cary Memorial Library addition committee, treasurer of the Community Services of Lexington, past president of the Parent Teachers Association, and as a town meeting member.

Kennett W. Patrick, a graduate student associated with the Class of 46, has been named president of Consolidated Systems Corporation, a newly formed wholly owned subsidiary of Consolidated Electrodynamics Corporation located in Monrovia, Calif. The new corporation employs

approximately 400 persons who are engaged in the design, development, and manufacture of custom-engineered instrumentation systems for industrial control, chemical analysis, dynamic and static testing, and high-speed electronic data processing. Ken joined C.E.C. in 1954 as director of the Systems Division, became director of the Transducer Division in 1955 and vice-president in charge of the Monrovia Division in 1958. Ken was an honor graduate of the Naval Academy before earning his S.M. degree from M.I.T. While in the Navy he served as West Coast technical liaison officer for the Bureau of Ordnance, chief engineer of the Terrier missile task force, and head of the guided missile research section of the Bureau of Ordnance.

Jim Corbett is senior engineering specialist in Thompson Products Advanced Engineering Group working on missile systems, rockets, and auxiliary power supplies. The Corbetts have three children and live at 3607 Beacon Drive, Beachwood Village, Cleveland 22, Ohio. Captain Bennett C. Oelheim is in the Planning Division of the Bureau of Ordnance, Washington, D.C. He makes his home at 5327 Baltimore Avenue, Chevy Chase, Md. Emerson H. Newton is in the Industrial Research section of Arthur D. Little, Inc., working on the electrochemical problems of corrosion, electrodeposition, and metal finishing. He is married, has two girls, and lives at 39 Virginia Road, Arlington, Mass. Bernard J. Haverback is a physician in Los Angeles and lives at 4923 Laurel Canyon Boulevard, North Hollywood, Calif. Joseph C. Bates is president of the Bates Engineering Company, a concern which specializes in the overhaul and repair of ground support equipment for the Air Force. He is chairman of the Sparta, Ill., Airport Authority, and makes his home in that city at 612 East Broadway.

J. Graham McQuarrie is superintendent of production co-ordination for Monsanto Chemical Company in Texas City, Texas. He lives at 315 21st Avenue North in that city, and serves as chairman, South Texas section, American Society for Quality Control. He is also district training chairman of the Mainland District, Bay Area Council, Boy Scouts of America, and secretary-treasurer of the "Galveston Flying Eagles, Inc." Marshall Waller is a lieutenant colonel and chief of the equipment branch, Test Division, of the U.S. Army Aviation Board, Fort Rucker, Ala. Ernest U. Buckman is a salesman for Lionel D. Edie and Company, a firm of investment counselors and economic consultants. He lives at 270 Grant Street, Sewickley, Pa. Ju Chin Chu served as technical director for Chemical Construction Corporation of New York between 1956 and 1957, consultant to the Agriculture Research Service of the U.S. Department of Agriculture and Argonne National Laboratory since 1955, and is now professor of chemical engineering, Polytechnic Institute of Brooklyn. He has three children and lives at 34 Linden Street, Garden City, N.Y.

Margaret Garritsen deVries is chief of the Far Eastern Division, Asian Department, of the International Monetary Fund, Washington, D.C. Her division is responsible for fund action and policies

concerning the Far Eastern countries, and the fund is essentially an intergovernmental agency dealing with monetary, exchange, and financial problems. The fund offers advice and technical assistance to member countries and provides short-term borrowing facilities; member countries are obliged to consult on the maintenance of their exchange controls and on changes in their exchange rates and currency practices. Margaret is married, has one daughter, and lives at 10018 Woodhill Road, Bethesda 14, Md.

Robert L. Jacks is project manager for the M. W. Kellogg Company of New York City. He is also vice-chairman of the American Institute of Chemical Engineers equipment testing and procedures committee, and secretary of their standards committee. He lives at 6 Peter Cooper Road, New York 10, N.Y. Fred Eric R. Innes is a physicist at the Air Force Cambridge Research Center at Hanscom Field in Bedford, Mass. He lives at 7 Fairfield Street, Boston 16, Mass. Alexander Goodfellow is a commander in the U.S. Navy, and is Tartar Weapon System project officer at the Bureau of Ordnance in Washington. He has served as officer in charge of the Pasadena annex, Naval Ordnance Test Station; commanding officer of the U.S.S. *Frank Knox* (DDR 742); and is a graduate of the National War College. He has two children and lives at 2605 Davis Avenue, Alexandria, Va. Edwin A. Schlang is director of research and engineering for Waljohn Plastics, Inc., of Brooklyn, N.Y. He has two daughters and lives at 1948 East 24th Street, Brooklyn 29, N.Y. Robert S. Loomis has his own consulting engineering firm, specializing in structural engineering for buildings, in Windsor, Conn. He is director and secretary of the Windsor Federal Savings and Loan Association, and lives at Mountain Road, East Granby, Conn.

This is being written in April, and we have one more piece to do for this year's publications. When it is done I will have used up all the backlog of news in my files, since the last few months there has been a drought as far as mail is concerned. If you are one of the 1,200 or more class members who have not communicated with us recently, please do so immediately, or we will have to drum you out of the Class. (Only joking—please write)—JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1948

Dick Harris' comments on the Class of '48's skiing safety record in the March issue were read with considerable interest. I even went so far as to read them to one of the nurses as she stuffed another pillow under my plastered left leg. I'm sorry, men, to have defaced an otherwise unsullied record; but my skiing season came to an abrupt halt about the middle of February. However, you can take pride in the fact that I went about it with the unfettered abandon so characteristic of the way we '48 men hurl ourselves into the breach in moments of challenge, and I managed to do quite a thorough job of it.

Others of our Class made much more worth-while contributions to our general reputation during the unusually long, cold

winter. Dr. Charles B. Reimer is in the process of establishing a new electron microscope laboratory at Eli Lilly and Co. of Indianapolis. This laboratory will be used by Dr. Reimer to further his studies of the biophysical aspects of cancer and virus diseases and for other research. He received his Ph.D. in biochemistry from Johns Hopkins University. Robert W. Roop, Vice-president of General Atomics Corporation and one of its four original founders, has been appointed to the additional position of vice-president of Atronic Products, Inc., a company which is affiliated with General Atomics. William Shipman has been advanced to an associate professorship at Worcester Polytechnic Institute, where he has been an assistant professor for a year.

Those who earn their daily bread as educators shudder and quake at reports on the development of machines which will not only find a book in a library, but read it for you and *teach* you from its contents. At the Western Joint Computer Conference in San Francisco early in March, Calvin N. Mooers, inventor, and proprietor of Zator Company of Cambridge, Mass., predicted that in the next 20 years such machines will begin to replace human cataloguers and researchers. Not only that, but these machines, albeit in a kindly, helpful way, will talk back to the person in the library who is seeking information, telling him what is available and helping him to use the classification system. Furthermore, the machines will be full of friendly advice to assist the frail human to use the library more effectively, as well as to assist him the better to use the library machine itself! Actually, Mr. Mooers goes on to say, the best information retrieval systems of the present day are already doing all this in a primitive way. To make a long story short, on that future day when these information machines have been sufficiently developed, it will be possible to ask the machine for a history of the development of library machines in 800 words and get it!

Speaking of information retrieval systems, our hats are off to Herb Kindler and committee for a fine job on the Tenth Year Class Profile. We include in our plaudits the designer of the cover, Phyllis Kindler.—ROBERT R. MOTT, RICHARD H. HARRIS, *Secretary*, 26 South Street, Grafton, Mass. HARRY G. JONES, *Assistant Secretary*, 94 Oregon Avenue, Bronxville 8, N.Y. HERBERT KINDLER, *Assistant Secretary*, 128 Elatan Drive, Pittsburgh 16, Pa. ROBERT R. MOTT, *Assistant Secretary*, Box 113, Hebron, Maine.

1949

By the time these notes reach print, '49's 10th reunion may well be in progress. In case you're making a last minute decision to attend, you'll be interested in these further details of the June 12 to 14 week end at the Curtis Hotel, Lennox, Mass. The Sunday morning seminar on starting a new business will be headed up by Earl Eames with Wally Rou and Bill Lam. Also to be covered in this session: a discussion of job opportunities including resumé writing, hiring techniques, and job seeking approaches. Archie Harris will head up

this portion of the meeting. Saturday sports will include softball, enjoyed by many at the fifth reunion. Tennis and golf facilities are also to be available. Ample opportunity for camaraderie in the Dry Gulch Saloon. And remember — wives are invited. Those of you in the Boston area can phone Russ Cox, 103 Loring Road, Weston, Mass., or Kemon Taschioglou, c/o Polaroid Corporation, 730 Main Street, Cambridge, Mass.

Your Secretary, who doesn't know for sure whether he'll be at the reunion, wishes to take this opportunity to extend greetings to all those who will be there. Best wishes for continued good fortune also to all other members of 1949 on their 10th anniversary. — O. SUMMERS HAGERMAN, Jr., Secretary, 8519 Pringle Dr., Cincinnati, Ohio.

1950

We start this month's story with a report on the activities of a few of our classmates who are associated with the Nuclear Science and Engineering Corporation in Pittsburgh, Pa. Ronald Brightsen is president and director of N.S.E.C.; Harold Richter is assistant to the president; Paul Kruger is manager of the Department of Chemistry; and Eli Goodman is their senior chemical engineer. Ronald Brightsen's graduate work in nuclear chemistry and physics was taken at M.I.T., where he received a master of science degree in chemistry in 1950. His experience in atomic energy dates back to 1945 when he was analytical chemist for the Fercle Corporation in Oak Ridge, Tenn. In 1948 and 1949, he was employed as a radio chemist for Tracerlab, Inc., and participated in the 1948 atomic weapons tests in the South Pacific. He was editorial assistant in the preparation of *Radiochemical Studies; The Fission Products*, one of the McGraw-Hill volumes covering the wartime work of the Manhattan Project. He spent four years as an intermediate and senior scientist at the Westinghouse Atomic Power Division. His responsibilities there involved theoretical and practical planning of radiochemical experiments and projects related to thermal reactor development, and included isotopic analysis, radioactivity and flux measurements, radiotracer studies in corrosion, and fission product studies. Ronald Brightsen was one of the motivating influences behind the conception of N.S.E.C., and its formation.

After obtaining his A.B. degree from Franklin College in 1947, Dr. Harold Richter spent one year at Argonne National Laboratory investigating short-lived fission products. Thereafter he went to M.I.T., and obtained his S.M. degree in 1950 and his Ph.D. in 1952. His doctoral thesis on "Photofission of Uranium" required his gaining a broad experience in radiochemical analysis, in addition to working with the various particle accelerators there. After leaving M.I.T., Dr. Richter taught for two years in the Chemistry Department of the University of Oregon. He left Oregon to join the chemical research group of the United States Naval Radiological Defense Laboratory in San Francisco, where he carried out radiochemical analyses and research for the Defense Department weapons tests.

In August of 1955, Dr. Richter took a position as senior nuclear chemist with Nuclear Science and Engineering Corporation in Pittsburgh, Pa. In this capacity, he helped develop new methods of radiochemical analysis and gained experience in low-level radioactivity techniques. Later, as assistant to the technical director, he helped in the detailed planning of technical work. During this time, he developed a method for determining submicrogram quantities of uranium in steel solutions and helped in finding a technique for determination of millimicrogram amounts of boron in transistor-grade silicon. He gained experience in the problems of radioactive tracer experiments and in neutron flux monitoring. As a result of his previous experience and his work while at N.S.E.C., Dr. Richter has a close familiarity with fission-product chemistry, ion-exchange techniques of analysis, tracer chemistry, flux monitoring, and the planning of experiments. Since October, 1956, Dr. Richter has been assistant to the president and in charge of the Consulting Department. He assists the Sales Department in technical matters. His duties also include technical editing, assisting with long-range company planning, and formulation of company policy.

Dr. Paul Kruger, as manager of the Department of Chemistry, is responsible for nuclear chemical operations at N.S.E.C. Under his supervision, sections have been organized for low-level radiochemical operations, cyclotron-produced radioisotope production, radiochemical analysis, and nuclear chemistry projects for research and development operations. Low-level chemistry projects include routine measurement for Strontium 90 fallout found in biological samples, the development of the first commercial laboratory for radiocarbon dating, and tracer experiments involving minute quantities of radio-activity. Dr. Kruger developed a program at N.S.E.C. supplanting the Atomic Energy Commission as a supplier of processed and carrier-free cyclotron-produced radioisotopes. The Chemistry Department produces, processes and distributes throughout the world its carrier-free radioisotopes.

Jack Reeves is at the Cardiovascular Laboratory at the University of Colorado Medical Center. Jack is our Rocky Mountain correspondent, and he is anxious to hear from you Mountaineers. Incidentally, Jack and his wife have just bought a new house, so address your letters to 1270 Dexter Road, Denver 20, Colo. Reporting on some of our classmates, Jack writes as follows: "Oscar Eubank wrote that after 18 months at Rifle, Colo., with Union Carbide's shale oil pilot plant, they had closed the operation and he was now back at the company's research center at Brea, Calif. Burch Winder is in south Denver (Littleton, Colo.) where he is chief of service engineering for Frank R. Cook. Burch married Jeanne Wells of Beverly, Mass., in 1954, and they now have two children. Lee Richardson believes Westinghouse is a great company. He has been at Los Alamos, N.M., for two years but now he and his family have returned to Pittsburgh. Lee married Joyce Schultz (from University of Michigan) in 1956, and they now have one child. Lee likes the West except that he rarely saw anyone

from the Class of '50. Lybrand Smith writes that he was drafted in 1951 and served in Korea. He re-enlisted in 1955 and now is working in electronics at the Holloman Air Force Base, New Mexico."

Ed Hayes recently left the Applied Physics Laboratory, Johns Hopkins University, where he headed mechanics and hydraulics projects, to take over the Directorship of research and development for Aviation Division of Kelsey Hayes Company, Detroit, Mich. Fletcher Bartholomew joined the Boeing Airplane Company in Seattle, Wash., as a meteorologist in May, 1958. Jack Christman completed his graduate work in electrical engineering in 1950, now has one boy 10, one girl 7 and one-half, one girl 5, and one small dog named Friskee. He has been promoted to the rank of commander, U.S. Navy, and currently takes part in the Sloan Fellowship Program in Course XV.

Steve Senzer is living in Manhattan, still single and working for the Equitable Paper Paper Bag Company of Long Island City. He has been with them for five years and is presently product manager of the Polyethylene Division.

James Kennedy has announced the formation of James H. Kennedy and Company of Westport, Conn. The new firm specializes in public relations and direct mail for medium sized businesses. Formerly director of communications for Bruce Payne and Associates, management consultants, Jim had previously been managing editor of *Textile World*, a McGraw-Hill publication. Jim and Sheila have five children (three girls and two boys) ranging from two to seven years.

And speaking of large families, Gordon and Elizabeth Fromm have six children. Gordon has recently been appointed vice-president of operations, at the International Latex Corporation, Dover, Del. He will be responsible for all product research and development for the company's products, "Isodine Pharmaceuticals" and "Playtex Products." Gordon joined International Latex Corporation in 1955 as works manager and was named vice-president of manufacturing in 1956. Prior to joining International Latex, he was associated with Johnson and Johnson and Manhattan Soap Company.

Looking forward to seeing some of you on Alumni Day, June 15; try to make it. — JOHN T. WEAVER, Secretary, 24 Notre Dame Road, Bedford, Mass.

1953

Fred and Sandi Brecher announce the addition of a "female deduction" (Leslie Ann) on March 5; they are still living in Ardmore, Pa., a suburb of Philadelphia. Fred says: "Leslie is cute as a button with the lungs of a long distance swimmer." He also reports that he received his professional engineer's license in Pennsylvania.

Mark Schupack writes that after "much fussing and fuming" he accepted a teaching job at Brown University in the Department of Economics. He and the family expect to relocate in Providence sometime this summer; probably will be quite a change after the past couple of years on

the Princeton University campus. Also, I might point out that Mark wrote a paper entitled, "Economic Lot Sizes with Seasonal Demand," which appeared in the January-February 1959 issue of *Operations Research*. (By the way, Mark, did you notice the two articles on traffic???) Another classmate has accepted a position at Brown University: Bill (Oliver Hardin) Gilbert will become a research associate in the Division of Engineering starting this September. At the present time Bill and Ann are "occupied" with writing and typing (respectively?) his doctoral thesis in soil engineering here at M.I.T.

Dick Marciano made the grade! He and Elizabeth LaFlame were married early this February in Leominster, Mass., and then left for a tour of six countries in Europe. Presently Dick is working in the capacity of research engineer at the Naval Underwater Ordnance Station in Newport, R.I.; his bride graduated from Fitchburg Teacher's College and now teaches in the Newton public schools.

Our class is not to be outdone! Eugene Mirabelli is the author of a novel, *The Burning Air*, which is published by the Houghton Mifflin Company and which has received an excellent review by the *New York Times*. Eugene transferred from M.I.T. in 1950, and completed his B.A. at Harvard. This was followed by an M.A. from Johns Hopkins; he is now a teaching fellow at Harvard. David Capson, who is president of the Forum Corporation in Cohasset (prior to that he taught at Tech after receiving his Ph.D.), recently was invited to speak to the Quincy Rotarians. The subject for his talk was, "Food and Electronic Advances."

Some recent family doings: Frank Turcotte and his wife are expecting their second child sometime in July. Three of our classmates recently fathered their second son. Bob Robertson was one of them; he is presently working for Turner Construction Company and stationed on a project at Princeton, N.J. Dick Chambers and Bob McDonald were the other two. Both are still in this area: Dick, a research associate at M.I.T.; and Bob, with Vappi Construction Company. — MARTIN WOHL, *Secretary*, Apartment 8-18C; 100 Memorial Drive, Cambridge 42, Mass.

1954

With our reunion just a few days off, we would like to remind those of you who will be with us about the informal get-together with the Class of 1953, to be held at the M.I.T. Faculty Club on Friday night, June 12. We hope that everyone who will be in Scituate on Saturday can also be among those present on Friday night. In any event, we're all set for our first wild week end of re-togetherness.

We have a few last minute, prereunion news items to pass on. Bill Ferrini has absconded to Mexico, where he is pursuing his architectural pastimes and taking a few courses at the University of Mexico. Gerry Perlstein will leave Oak Bluffs, Mass., where he has been teaching, and travel to Troy, N.Y., in a few days. Gerry has a fellowship at Rensselaer Polytechnic Institute. And speaking of fellowships, the National Science Foundation saw fit to bestow one of their summer research

grants upon the shaggy brow of Yours Truly, for a session of mathematical investigations at St. Louis University this summer.

On the military front, we find Mel Cerier and Bill Eccles have both retired from active duty and are in the process of readjusting to civilian life in Newton Center, Mass., and Paoli, Pa., respectively. To help keep our national defense in balance, Fred Hofmann has entered the military world at Wright-Patterson Air Force Base.

We are very sorry to have to report that Dick Morgenstern died suddenly on March 31.

More news later. Right now, we are rushing off to the reunion. And hoping to see a good many of you in person when we get there. — EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1954G

A recent letter from Austin Whillier, II, '53G in Pretoria informs me that he is working hard, enjoying it, and is in charge of hydraulics and solar energy research in the National Research Laboratory in the Union of South Africa. Although there are many M.I.T. men out there, Austin comments, "not enough."

Major Thomas T. Jones, I, has recently been awarded the Army Commendation Ribbon with Metal Pendant in recognition of outstanding service as Company C Commander, Battalion S-4, and division engineer supply officer at Ford Hood, Texas. He was cited for his outstanding initiative, leadership ability, professional competence, loyalty and devotion to duty. He and his wife, Mary Jerene, and three children — Thomas, 8, Andrew, 6, and James, 2 — reside at Fort Leavenworth, Kansas, where he is now a student in the 10-month regular course given by the U.S. Army Command and General Staff College.

William H. Pickett, VI, is in charge of purchasing and subcontracting for Bolt, Beranek, and Newman, consulting engineers in Cambridge. He has resided in Ashland since 1953, is married and has a son in elementary school. He has been active in community affairs, serving as committee chairman for Pack 1 Cub Scouts and a member of the Citizens Committee; and he was recently a candidate for election to the school committee.

Richard D. Thornton, VI, is now an assistant professor of electrical engineering at M.I.T. Recently he received the W. R. G. Baker Award for the best paper in the Institute of Radio Engineers *Transactions*.

That's all the news for this month. — NEWTON SHANBROM, *Secretary*, 824 Gilmore Drive, Reynoldsburg 26, Ohio.

1955

It's always strangely wonderful when this '55 man returns to Cambridge and M.I.T., for it seems that the places and the faces never change. I find it hard to believe that four years have passed so quickly. Your male correspondent is now back in the saddle of civilian life, and after two years of Air Force galavanting, is playing the part of a sedate citizen of Cambridge, Mass., and trying his hand at

engineering with Pickard and Burns in Needham. I said that the faces never seem to change; and that can almost be taken literally, for I bump into '55 classmates quite frequently.

One night a few weeks ago, I dropped into the Midget Restaurant for a cup of coffee, and sat down next to Pete Heller. We were in the same freshman section back in '51, and had lots to talk about. Pete is working on his Ph.D. in physics at Harvard, and is instructing groups of high school science teachers in modern methods of teaching elementary physics. These people are at Harvard as special fellows under a grant given by the National Science Foundation.

A phone call at 1:00 A.M. a few weeks ago announced that Joe Saliba was in town and on the way over. We sat up to 3:00 discussing such obscure problems as might occur to bachelor electrical engineers. Joe has recently left Dumont, and is about to go in on his own in the data processing business in the state of New Jersey.

Joe let on that Dave Rados was at the Harvard Business School, and a few days later, another '55 reunion took place at 15 Linnaean Street. Dave had spent two years at Wright-Patterson Air Force Base, and managed a 30-day leave in Japan investigating the secrets of the Orient. Upon being civilianized, and having six months to go before school, Dave made a grand tour of Europe and the Middle East. I guess that Cambridge must seem a bit sedate to him, also.

Dave told me that Jim Kennedy was at Stone and Webster in Boston, and that his wife Marsha is expecting shortly. Others in the area are Marty Glasberg at United Shoe Company and Jack Kenney, who is with a construction firm in Waltham.

Dell sent along to me two notifications of new class legacies. Bill Chandler tells of Cindy Lynn, born February 14. Curtis William is now two years of age, and the Chandler family is in Cloquet, Minn. (near Duluth). Bill is an industrial engineer with the Northwest Paper Company. Volume II of the American Parental Review included a paper by David and Marilyn Nasatir, of Berkeley, Calif., with Gail Nasatir as research assistant. "A follow up study of the foundations for successful family life, this new project proposes a systematic study of marriage focused on the cooperative efforts of parents and siblings as related to such personal characteristics as name (Robin), weight (6 pounds 5 ounces), and age (born February 27)." Best of luck to the Chandlers and the Nasatirs.

Two of our local military have earned their silver bars — 1/Lieutenant Mel Barkan at Fort Devens, and 1/Lieutenant Al Schell at the Air Force Cambridge Research Center. Talking about the service, Bill Lipke, Dick Koehler, and Dick Morgenthaler were recently relieved from active duty at A.F.C.R.C. Bill is staying on as a civilian, Dick Koehler took off for Copenhagen, where he has a job lined up; and Dick Morgenthaler is back at M.I.T. for a doctorate in electrical engineering. Buddy Jacobs was released from two years with the ordinance corps in Yuma, Ariz., and is now trying his hand

at playwriting while attending Post College on Long Island.

At M.I.T., I see where two '55 men have reached faculty rank, not to mention that they have their doctorates besides. Ron Howard and Charlie Mohr are assistant professors in the Electrical and Chemical Engineering Departments, respectively. Harry Schreiber is at M.I.T. doing graduate work in Course XV, and Gordon Pye is getting a master's in economics.

A fine letter was received from Larry Ingber, postmarked West Newton, Mass. He tells of three children, twin daughters aged four and a half and a son aged two. I wonder whether this is a class record — anybody with more than three? Larry is running his own business as a manufacturers' representative in electronics, covering the New England area.

Jim Thacher was married to Pauline Mae Griffiths, of Wilmington, Del., on February 7. The newlyweds will live in Cumberland, Md., where Jim is associated with the Allegheny Ballistic Laboratories. That's all for this time around. See you next month. — MRS. J. H. VENABLE, *Secretary*, 107 Mullin Road, Wilmington 3, Del. L. DENNIS SHAPIRO, *Assistant Secretary*, 15 Linnaean Street, Cambridge 38, Mass. Tel: EL 4-4901.

1956

Someday I should learn not to complain. Last month I griped about not receiving much mail. The result should have been predictable from Murphy's First Law (if anything can possibly go wrong, it will): this month I have received virtually no information whatsoever.

Our Alaska-based secretary, Bruce Bredehoft, reports that signs of spring were appearing in the far North as early as March, but that "it snowed a little since the last thaw, and the level is back up to the roof again." Nice place. Guy Spencer and Marv Bahnman are cochairmen of the regional Alumni Fund personal solicitation drive in Fort Worth. Guy has also turned into a birdman, now owns "approximately one-seventh" of an airplane, and is learning how to fly.

Doug Willis has recently married, and is now involved in a part-time boat building business, making Fiberglas reinforced sailboats. Steve Cohen, now at Harvard Medical School, has announced his engagement to Edith Ezrailson of Wilmington, Del. The wedding is planned for June.

Class Prexy George Luhrmann and wife Winifred have announced the arrival of an infant Luhrmann, Tanya Marie, born on February 24. LIEUTENANT BRUCE B. BREDEHOFT, *Secretary*, AO 3067617, 794th AC and WRON, APO 345, Seattle, Washington. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, Quebec, Canada.

1957

Hal and Mim Smith have a baby, Natalya Marie Smith, since Wednesday,

February 18, 8:37 P.M. Hoddy Schumacher is stationed in the Aleutians, with 1,000 men and no women, operating a ham radar set. Mike Allik married Judy Prehler of Wellesley College. Mike is stationed at the Army Engineering School at Fort Belvoir, Va., and plans to attend the Harvard Business School next September. Judy is teaching sixth grade at the little red schoolhouse on post.

Marty Zombeck, Don Corrigan, and Leon Vann are all in Boston. Leon will be married this summer. Bob Root is doing graduate work and plans to teach high school physics, chemistry, and math. Harvey Perlstein married Muriel Tishler of Swampscott last March. Ushers included Don Arnush, Andy Cohen, and Louis Maisel '56. The Perlsteins honeymooned in Bermuda. Harvey is working on his M.S. in electrical engineering at Brooklyn Polytechnic Institute. Bob Gal is assistant to the general manager at Gimbels. Henry Cutler is engaged to Mary Cornforth of Wellesley College. Hank is working on his S.M. in electrical engineering at Tech.

We had dinner with Hank Salzhauser and his fiancée Sue Druck last March just before Hank left for Aberdeen for six months with Ordnance. Sue, who graduates from Smith this June, tells me there will be a wedding next fall. Jim Alstrom was one of 13 men who were elected Baker scholars, the highest scholastic award at the Harvard Business School. George Gardiner and Dave McGoff received master's degrees in nuclear engineering at Tech last February. Earle Pughe and Charles Sargent received S.M.'s in electrical engineering from M.I.T. Meteorologist Russ Peirce spent last winter atop Mount Washington manning a weather station. Russ is meteorologist at Bedford Air Force Base. John Pacinda was wed to Carol Ann Paterno of East Hartford last February. John's ushers included Dick Knapp and Milt Lilie. The couple took a Caribbean honeymoon. Fred Whittington was wed to Marjorie Ann Babington of Magnolia, Miss., last April 4. Fred is an ensign stationed with the U.S.S. *Loyalty* out of Long Beach, Calif. — ALAN M. MAY, *Secretary*, 530 East 84th Street, New York 28, N.Y. MARTIN R. FORSBURG, *Assistant Secretary*, 383 Harvard Street, Cambridge, Mass.

1958

Hi again. As we continue our story from the suspense-filled point at which we left it last month, we find our heroes of the Class of '58 still moving forward in all fields.

The echo of wedding bells lingers yet from a trio of fall weddings which we can report. Carl Peterson, S.M. in II, was married to Susan Truby of Altoona, Pa., in early September. She's a graduate of Hood College and Massachusetts General Hospital School of Nursing, where she's a member of the research staff of the Harvard Medical School. Carl, who did

his undergraduate work at the University of Michigan, is now an instructor in the Mechanical Engineering Department here at Tech while working toward his doctorate in that field. Also, Norm Smith, X-B, wedded Vera Goldstein of Boston and the Boston Dispensary School for Medical Technicians late in the summer. Norm is also back at Tech for graduate study, majoring again in the Chemical Engineering Department. Inverting names, we find that Max Goldstein (no relation), II, was married to Sharon Kligman of Allerton, Mass., around the same date. Following a wedding trip to Bermuda, the couple returned to reside in nearby Allerton.

Catching up on one we missed, Dick Hardy, XVI, was married to Linda Eisenberg of Belle Harbor, Long Island, and Skidmore College very soon after graduation. By now our error has been compounded by the fact that there is a third Hardy in the family — a daughter. Dick and family are living in the Boston area while Papa continues his studies at M.I.T. Dick's been doing a little academic branching which has brought him partly into the Nuclear Engineering Department, whereby Yours Truly has had some contact with him.

This subject of offspring, I suspect, will become more significant with passing time for the Class of '58; but enlistments for the "Dawn Patrol" are already filtering in to this advance headquarters, with many more to come. Janet Patricia was a recent addition to the family of Doris and Bob Wilcox, S.M. in XXII, who are currently residing in Bethesda, Md. Bod is with the Division of Licensing and Regulation of the U.S. Atomic Energy Commission in Washington.

Other pertinent facts concerning Class of '58 grads include the employment of John Deyst, XVI, as an associate engineer in the Marine Instruments Engineering Division of the Sperry Gyroscope Company of Great Neck, Long Island. Gerald Saul, S.B. in both X and XV, is with the Development Department of the Toilet Goods Division of Procter and Gamble in Cincinnati. Salt Lake City is the current home of Tom Fuller, S.M. in XV, along with his wife and daughter Deborah Kay (more recently followed by Gwen Karen). Tom is presently grounding himself in the various phases of mining, milling, smelting, and refining operations for copper for his work with the Utah Copper Division of the Kennecott Copper Corporation.

A couple of other items garnered from the local gossip: Mike Falk, XV, is another deserter to the Harvard Graduate School of Business Administration; Bob Phinney, XII, is doing graduate work in the same field here at Tech; and Gary Fallick, X, is also an S.M. candidate at M.I.T.

Well, that just about concludes this month's "name-dropping" session for now. See you again next issue, next month. — HERB JOHNSON, *Secretary*, 92 Marlborough Street, Boston, Mass.

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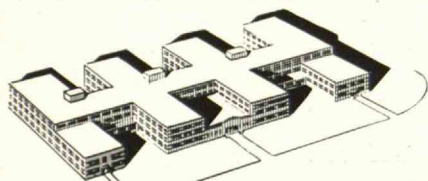
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